PHARMACISTS' ROLE IN OVER-THE-COUNTER ABUSE
More than half of Americans took at least one OTC product in the last six months. Abuse of these substances has become recognized as a growing problem.

MEDICATION ERROR REPORTING: BARRIERS AND AREAS OF IMPROVEMENTS
Experts estimate that as many as 98,000 people die in any given year from medical errors that occur in hospitals.

MEET MPHA'S NEW EXECUTIVE DIRECTOR
Aliyah N. Horton, CAE is a certified association executive (CAE) with more than 20 years of experience in public policy and the non-profit sector.

CONTINUING EDUCATION
Skin care is important to the health of every newborn. Pharmacists have the opportunity to help by recommending appropriate skin care to parents.

Maryland Pharmacist

Pharmacy Legislative Action

The long road to change

Legislative Day 2015 will be held on Thursday, February 19 in Annapolis, MD.

A lot of NEW things and plenty of activity are going on this winter and into early spring. This is YOUR Association and we need you as an active participant.

A New Year means CHANGES!

The New Year always brings with it a message of hope. We make resolutions of positive change in our life with the hope to create permanent improvement. The Maryland Pharmacists Association is no different and this year will definitely be a year for change!

Our NEW Executive Director, Aliyah Horton, starts at the onset of the New Year! This is a new field for her to explore and discover. Pharmacy is a completely different culture than the professionals that she has worked with before. The Board of Trustees will be working with her to introduce her to the pharmacy community and we encourage you to join us as we share our wonderful world with her.

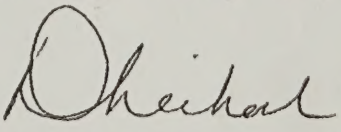
A NEW building means new construction and that will begin at the onset of the New Year! This is an exciting time for the Association as it is the first time in our history that we will have a permanent space for our museum and office. There will be many opportunities for our members to be involved in the excitement and unveiling of our new space. I hope that you will be a part of the celebration.

A NEW year for continuing education credits and required trainings is upon us! Join us for the 2015 MPhA/MD-ASCP/MPhS Mid-Year meeting on Sunday, February 15. This is a joint meeting and we are excited to partner with our fellow Maryland friends for this event. There is an exciting line up of programming for this meeting. We will also present our first MPhA Pharmacy Technician of the Year award during the lunch break. We hope that you will be able to join us!

A NEW legislative session is quickly approaching! Make plans for Legislative Day on Thursday, February 19 as pharmacists and student pharmacists from all over the state meet in Annapolis to explain the importance of pharmacists as a member of the health care team. Provider status is the buzz word in pharmacy today. Maryland will do its part to help the buzz resound by continually fighting for provider status. Our hope is to strengthen the pharmacists' scope of practice this session and to make sure our message is clear.

A lot of NEW things and plenty of activity are going on this winter and into early spring. This is YOUR Association and we need you as an active participant. Make a professional New Year's resolution TODAY to pick one NEW way that you will be involved in MPhA this year. We hope to see more of you!

One for ALL…Stronger by Association-



Dixie Leikach, RPh, MBA, FACA
President

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We welcome your feedback and ideas for future articles for Maryland Pharmacist. *Send your suggestions to Kelly Fisher: Maryland Pharmacists Association, 1800 Washington Blvd., Ste. 333, Baltimore, MD 21230, call 410.727.0746, or email kelly.fisher@mdpha.com*

PHARMACISTS' ROLE

In Over-The-Counter Abuse

Deanna Tran, PharmD, BCACP
Assistant Professor, University of Maryland School of Pharmacy

Sharon Gatewood, PharmD
Associate Professor, Virginia Commonwealth University School of Pharmacy

More than half of Americans (59%) took at least one over-the-counter (OTC) product in the last six months.[1] Yet, the large majority of Americans (92%) believe that OTC medications are safe and effective.[1] This is one of many factors that contribute to intentional OTC abuse. Intentional abuse of a drug is defined as exposure resulting from intentional, improper, or incorrect use of a substance in order to experience its psychoactive effects.[2] Other factors that contribute to OTC abuse include easy access, low cost, and a wide range of information available to patients regarding these products.[3] Abuse of these substances has become recognized as a growing national problem. Between 2002 and 2005, OTC substance abuse by 18-to-25-year-olds increased by 17%.[4] Dextromethorphan, pseudoephedrine, antihistamines, and nicotine replacement therapies are some of the most commonly abused OTCs.

With rising concerns in OTC abuse, community pharmacists are in a unique position to assist with abuse detection, intervention and education, in collaboration with other healthcare providers. Community pharmacists are one of the primary healthcare professionals able to assist patients in the appropriate selection and use of an OTC product at the time of purchase.[5]

Pharmacist Role with Drug Abuse

Recognizing abuse

Pharmacists' ability to recognize abuse opens the window to further education, discussion, and/or intervention with the patient. When a patient is in the OTC aisle or approaches the pharmacy counter with a question regarding an OTC product, pharmacists can observe the patient for symptoms of abuse. This may include euphoria (abnormally elevated mood, laughing with no known cause), sedation (drowsiness, slowed and/or slurred speech, lack of coordination), and withdrawal (sweating, anxiety, irritability).

Educating the patient

Educating patients about OTC products can also help to decrease OTC abuse. If a patient is showing symptoms of possible OTC abuse, the pharmacist can mention the long term consequences of overusing the product during counseling. For example, cognitive deterioration, toxic psychosis, and bromide toxicity are possible long-term consequences of dextromethorphan abuse. Many times community pharmacists have built a trusting relationship with their patients, which makes it easier for patients to possibly open up and discuss their concerns.

Decrease access

One strategy to combat OTC abuse is to limit the access of these commonly abused products. Pharmacists can decrease the supply of commonly abused OTC products or move these products behind-the-counter, requiring individuals to request the product at the pharmacy counter.

This provides pharmacists the opportunity to assess individuals who purchase these products, determine the potential for abuse, and make appropriate interventions, and/or recommendations as necessary.

However, decreasing access to commonly abused OTC products is only a temporary solution to the problem. For instance, patients may go to an alternative pharmacy where such barriers are not in place. To combat this, pharmacists must inform nearby pharmacies of patients who often frequent the community pharmacy seeking highly abused OTC products. Pharmacies in the United States are currently not electronically connected to inform nearby pharmacies of this type of abuse. This lack of connectivity and communication between pharmacies also diminishes the effectiveness of the Combat Methamphetamine Act.[6] The purpose of the Act is to decrease access of pseudoephedrine, an ingredient needed to produce methamphetamine. The Act currently requires pharmacies to maintain a log of the patients who buy pseudoephedrine products and limits the quantity of pseudoephedrine an individual may buy per month.[6] Since not all pharmacies' pseudoephedrine logs are connected to each other, individuals may still go to multiple pharmacies to buy pseudoephedrine. To combat this, 25 states have already passed laws implementing a real-time electronic sales tracking system, such as The National Precursor Log Exchange (NPLEx). NPLex is a real-time electronic logging system which pharmacies sign up to use and track sales of OTC cold and medications containing precursors to methamphetamine.[7] Advocating and bringing awareness to your local legislators about the issues of abuse and implementing real-time electronic sales tracking systems that connects all pharmacies throughout the state can also significantly decrease OTC abuse.

Referral and Working with Other Health Care Providers

It is also important for a pharmacist to refer a patient to their primary care providers (PCP) if the pharmacist believes a patient is abusing an OTC product.[8] Ideally, the pharmacist should continue to be a part of the patient's care plan towards recovery. This includes sharing the pharmacist's recommendations for treatment with the PCP, discussing recommendations for referral to an abuse center, and frequent follow-up by both the pharmacist and the PCP.[8]

Referral and collaboration is crucial, but the most important component is the patient. Educating the patient and using motivational interviewing skills to empower the patient to want to seek help is the first step towards his/her recovery.[9] Once the patient agrees to seek help, the patient should continue to be an integral part of the care plan.

Record Keeping

Pharmacists could also implement a record keeping program in their pharmacies. This may be a formal or informal process, where pharmacists keep a record of the patients they suspect are abusing OTC products in order to follow them over time. The record should include the OTC product, the amount purchased, pattern of abuse, and number of times the pharmacist has educated the patient. With this record, the pharmacist may choose to educate the patient to seek further help, contact the patient's PCP, or refuse further sales after a certain number of encounters.[10] Pharmacy technicians can also play a role in record keeping by helping develop and maintain these records.

Conclusion

OTC abuse is an important and growing health concern, which all health care providers, especially pharmacists, should be made aware. Pharmacists must continue to stay abreast of changing trends of abuse of OTC medications to bring awareness to their patients, as well as to develop strategies to detect, prevent, and reduce drug abuse by working with their local, state, and national legislators.

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Welcome to our *newest* members!

Richard DeBenedetto
Lisa Odenwelder

...and to all our Student Pharmacists!

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University of Maryland Eastern Shore School of Pharmacy
University of Maryland School of Pharmacy

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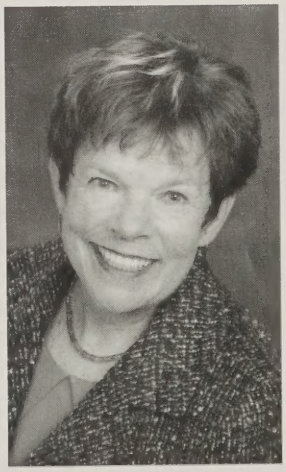
Member Mentions

On Wednesday, October 29, **Dixie Leikach**, RPh, MBA, FACA, was installed as President of the Maryland Pharmacists Association. On Saturday, December 13, Dixie also celebrated her adult Bat Mitzvah at the Chizuk Amuno Synagogue in Baltimore. Dixie and her husband, Neil, own three independent community pharmacies in the Baltimore area. She is a Past National President of Lambda Kappa Sigma International Pharmacy Fraternity and Past President of the University of Maryland, Baltimore School of Pharmacy Alumni Association. Dixie graduated from University of Maryland School of Pharmacy in 1992.

Dr. Ellen Yankellow, president and CEO of Correct Rx Pharmacy Services Inc., has been named The Children's Guild's 2015 Sadie Award Winner and will be honored at The Children's Guild's Cabaret for Kids on February 28, 2015. The Children's Guild is one of the largest nonprofit organizations focusing on providing programs and services to help children and adolescents with behavioral and emotional disorders. Dr. Yankellow has been praised by the Children's Guild for the high quality service she gives her patients and her passion for community service.



Dr. Cynthia Boyle, PharmD, FAPhA is the recipient of the 2015 Daniel B. Smith Practice Excellence Award. This award is in honor of the American Pharmacists Association's (APhA) first president and recognizes a pharmacy practitioner who has distinguished himself/herself and the profession by outstanding performance and achievement. Dr. Boyle will receive this award at the APhA's Annual Meeting in San Diego, CA in March 2015.

Dr. Deanna Tran, PharmD, BCACP has been selected by the American Pharmacists Association's (APhA) Board of Trustees to serve as 2015-16 APhA New Practitioner Advisory Committee Member-at-large. Dr. Tran played an essential role in developing MPhA's New Practitioner Network in 2013 and served as the 2013-14 co-chair.

Do you have good news to share?

Send your Member Mention to kelly.fisher@mdpha.com.

Please enclose a photo if possible.

Medication Error Reporting:

Barriers and Areas of Improvements

By Annette Piotrowski, PharmD Candidate 2015, University of Maryland School of Pharmacy

Experts estimate that as many as 98,000 people die in any given year from medical errors that occur in hospitals and a significant number of those deaths are due to medication errors[1]. A medication error is defined as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to the products, procedures, and systems (prescribing, product labeling, packaging, compounding, dispensing, distribution, administration, education, monitoring, and use[1]). Finding someone to blame when a medication error occurs is a common response. However, rarely is it just the fault of one person's mistake. Healthcare systems are enormous and complex with multiple practitioners and technologies in place; therefore, medication errors can occur along any step of the process, usually involving multiple people. In recent years there has been advancement in patient safety, but there is still room for improvement, especially in the area of medication error reporting.

Medication error reporting is important to help prevent future medication incidents from occurring because it provides important feedback that identifies systematic failures in the medication cycle[3]. There are several Medication Reporting Systems that exist at local and national levels; some of these national voluntary reporting systems include the VA Patient Safety Information System, Joint Commission Sentinel Events Reporting System, USP-ISMP Medication Error Reporting Program, USP MedMARx™ Program, and the FDA MedWatch™ Program[9]. Institutions and hospitals may use other programs. Even with these nationally recognized systems in place, one common difficulty with medication errors is that they are often underreported.

Multiple studies have investigated reasons why underreporting exists and the types of barriers that exist. One study by Hartnell et al., found that most of the barriers that lead to underreporting could be grouped into one of three categories[4]: the individual (fear of consequences, shame, loss of reputation), the organization (reporter burden, workload, staffing levels, policies and procedures), and the culture (inevitability of error, habit, unsupportive attitude towards medical errors, and collegial bond). The reality is that combinations of all three categories play a role in hindering people from reporting errors. It should be every institution's aim to identify and remove the most prominent barriers so system failures can be identified and risk reduction strategies implemented.

Another study by Sarvadikar et al., examined the attitudes of healthcare workers (nurses, physicians, and pharmacists) on error reporting. Based on questionnaires and scenarios given and the data collected, the study's results suggested that the type and severity of the medication error influenced healthcare professionals differently. Nurses and pharmacists were more likely to report all medication errors whereas doctors were only likely to report an error that resulted in an adverse outcome[2]. Nurses were most concerned about disciplinary action in most scenarios because of a greater feeling of responsibility for an error and fear of the consequences. Although the sample size was small, these results suggest that there may be differences in attitudes to error reporting and perhaps different approaches are required to encourage medication error reporting among different healthcare professionals.

These same studies also explored the potential areas of improvement in the reporting process that could be implemented. Most study participants wanted reporting systems to be anonymous, less time consuming, and easy to use. Participants also thought receiving timely and useful feedback on what they reported would be encouraging since they would be more involved in the outcome of their reporting. Continuous staff education on what, how, and why to report errors also came up as an important request. Many participants stated they did not report because they were uncertain of what information to report. One study found that the largest increase in error reporting (92%) between 2000 and 2011 was seen when focus groups were utilized for "off-the-record" discussions to learn about risks[8]. Perhaps, overall changes in practices may lead to the improvements being sought in the reporting process.

Since voluntary underreporting of errors is so widespread, with the incidence varying from one error

per patient per day in hospitalized patients[10] to 24 errors per 100 admissions[8], proactive effort is needed to assess the risk of medication errors more aggressively. The Institute for Healthcare Improvement, the Institute for Safe Medication Practices, and the Joint Commission recommend various methods for medication safety assessments. The four most common medication safety assessment techniques include: incident report review, chart review, direct observation, and trigger tool- all which have different strengths and weaknesses.[8] They are described below:

- An Incident Report Review is defined as the voluntary reporting of incidents by health care personnel or patients.
- Direct observation refers to the direct, real-time observation techniques of all aspects of the medication-use process.
- Chart review encompasses concurrent or retrospective medical record review (medical records, discharge summaries, pharmacy databases, and laboratory data).
- Trigger tool is a targeted medical record review, either manually or automatically (computer alerts, coded medical records) that uses triggers or clues to identify adverse events and medication errors.

A study done by Gherardi et al., evaluated the four tools and identified that no one method is perfect and organizations need to identify which tool is best for them. The trigger tool appeared to be the most effective and labor efficient method whereas, direct observation was most likely to identify drug related problems detected by other methods. The review of incident reporting best identified high-severity drug related products and was generally more specific in identifying drug related problems than the other methods[7]. The trigger tool was documented to be the least labor-intensive method, followed by incident report review, direct observation, and chart review[7]. All of these assessments are important as they can be additional tools and resources to help detect medication errors.

Pharmacists are in an ideal position to contribute and take leadership of medication error reporting and its process. Pharmacists have extensive knowledge about medications, are heavily involved in the actual dispensing process, and have great opportunity to educate staff and patients on the importance of what, how, and why to report medication errors. Reporting medication errors can help save lives and provide useful data to identify areas for improvement opportunities. Many barriers to underreporting of errors have been identified including the individual (fear of consequences, shame, and loss of reputation), the organization (reporter burden, workload, staffing levels, policies and procedures), and the culture (inevitability of error, habit, unsupportive attitude towards medical errors, and collegial bond). Hopefully, once reporting systems are perfected, an organization's culture changes, and then the individual barriers will slowly be broken down. Ultimately, employees need a non-punitive work environment, an easy to use and effective reporting system, and quick and useful feedback. Adopting a culture of safe and effective medication error reporting will further support the mission for safe medication use.

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2015 Maryland Pharmacists Association Awards

Recognizing Pharmacy Excellence

Each year, MPhA recognizes individual professional excellence during the Annual MPhA Convention held in Ocean City, MD. To nominate a deserving pharmacist for one of the awards described below, complete and submit the following nomination form to: Award Nominations, c/o Maryland Pharmacists Association, 1800 Washington Blvd., Suite 333, Baltimore, Maryland 21230-1701. Nominations can also be submitted online at marylandpharmacist.org. **For consideration, nomination forms must be received no later than Friday, March 27, 2015.**

Nominations are reviewed and selections made by the Past Presidents Council. Upon selection, individuals will be notified in advance of the Annual Convention.

Bowl of Hygeia Award sponsored by the American Pharmacists Association Foundation and National Alliance of State Pharmacy Associations

Established in 1958, the Bowl of Hygeia Award recognizes pharmacists who possess outstanding records of civic leadership in their communities and encourages pharmacists to take active roles in their communities. In addition to service through their local, state, and national pharmacy associations, award recipients devote their time, talent, and resources to a wide variety of causes and community service. Any MPhA pharmacist member who has not already received the Bowl of Hygeia Award is eligible for nomination.

The Bowl of Hygeia is the most widely recognized international symbol for the pharmacy profession and is considered one of the profession's most prestigious awards. The Bowl of Hygeia has been associated with the pharmacy profession since 1796, when the symbol was used on a coin minted for the Parisian Society of Pharmacy. The bowl represents a medicinal potion and the snake represents healing.

Maryland Pharmacists Association Seidman Distinguished Achievement Award

Created by Henry Seidman, this award honors a Maryland pharmacist who has performed outstanding service over a number of years and whose service has resulted in a major impact on the pharmacy profession. Any MPhA pharmacist member who meets the criteria for this award is eligible for nomination.

Excellence in Innovation Award sponsored by Upsher-Smith Laboratories, Inc.

Established in 1993, this award (formerly known as the Innovative Pharmacy Practice Award) aims to recognize forward-thinking pharmacists who have expanded their practices into new areas. Any practicing MPhA pharmacist member within the geographic area who has demonstrated innovative pharmacy practice resulting in improved patient care is eligible for nomination.

Distinguished Young Pharmacist Award sponsored by Pharmacists Mutual Companies

This award is presented each year to a pharmacist who has graduated within the past ten years and has made a significant contribution to the profession through service to a local, state, or national pharmacy organization. Any MPhA pharmacist member who has graduated from a school of pharmacy within the last ten years is eligible for nomination.

Maryland Pharmacists Association Mentor Award

This award recognizes individuals who encourage pharmacists, technicians, and/or student pharmacists in the pursuit of excellence in education, pharmacy practice, service, and/or advocacy. Any MPhA pharmacist member who meets the criteria for the award is eligible for nomination.

Cardinal Health Generation Rx Champions Award sponsored by Cardinal Health Foundation

This award honors a pharmacist who has demonstrated outstanding commitment to raising awareness of the dangers of prescription drug abuse among the general public and the pharmacy community. Any MPhA pharmacist member who meets the criteria for the award is eligible for nomination.

Maryland Pharmacists Association Honorary President

An honorary position on the Board of Trustees is given to a person, not necessarily a pharmacist, who has worked for MPhA or Maryland Pharmacy over a long period of time. Any long standing contributor to the profession or the Association is eligible for nomination.

Award Nomination Form

To nominate an individual for one of MPhA's annual Recognizing Pharmacy Excellence awards, complete and return this form to Award Nominations, C/O Maryland Pharmacists Association, 1800 Washington Blvd., Suite 333, Baltimore, MD 21230, no later than Friday, March 27, 2015. All nominations will be held in strictest confidence by the MPhA Past Presidents Council, which is responsible for selecting the award recipients. The decision of the Council is final. Award recipients will be notified in advance of the presentation of the award.

Please provide the information as requested for each nominee and attach a current resume or a curriculum vita that demonstrates their professional and personal achievements. Also, please include a brief statement explaining why the nominee is deserving of the award. This information is essential for the Past Presidents Council to make well-informed decision as to which candidates will be selected. **If you would prefer to make your nomination online, visit marylandpharmacist.org.**

Bowl of Hygeia Award sponsored by the American Pharmacists Association Foundation and National Alliance of State Pharmacy Associations

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2014 Recipients of the "Bowl of Hygeia" Award

The Bowl of Hygeia award program was originally developed by the A. H. Robins Company to recognize pharmacists across the nation for outstanding service to their communities. Selected through their respective professional pharmacy associations, each of these dedicated individuals has made uniquely personal contributions to a strong, healthy community. We offer our congratulations and thanks for their high example. The American Pharmacists Association Foundation, the National Alliance of State Pharmacy Associations and the state pharmacy associations have assumed responsibility for continuing this prestigious recognition program. All former recipients are encouraged to maintain their linkage to the Bowl of Hygeia by emailing current contact information to awards@naspa.us. The Bowl of Hygeia is on display in the APhA Awards Gallery located in Washington, DC.

* 2013 recipient not previously pictured

Pharmacy Legislative Action:

The long road to change

By James C. Wang, PharmD, AE-C

Legislative Day 2015 will be held on Thursday, February 19 in Annapolis, MD. Please consider learning more below and attending this important day to make your voices heard! Visit www.marylandpharmacist.org for additional information and registration instructions.

For most pharmacists, the frontlines of their chosen profession are often dictated by the operational and clinical challenges of ensuring that appropriate medications are being ordered for or dispensed to the patients they serve. These are challenges in which pharmacists, experienced and new, are trained to engage in through board certifications, practice experience, residencies, or more rigorous pharmacy degree coursework. However, every year the practice of pharmacy is impacted in Maryland by yet another frontline the profession must face: the legislative arena found within the General Assembly in Annapolis. The day-to-day patient care that Maryland pharmacists engage in is regulated by the laws and regulations which define the scope of practice, operational oversight, and prerequisite requirements. As of June 2014, there were 22,846 active license pharmacy holders in Maryland, which includes both pharmacies, pharmacists, and technicians. Each one of these practitioners is inevitably affected by laws debated by these delegates and senators. The profession's ability and willingness to engage the representatives of its patients determines how the profession changes with each passing year.

The legislative process in Maryland is a complex one, defined by different procedural avenues which can derail even the simplest proposed law. Each of these bills requires correct timing and understanding of the necessary components to push through to the next step. For a bill to successfully make it into the books as a law, it must first be introduced in either the House or the Senate. Each bill is then referred to a committee, which may elect to vote on the bill. Once a committee has voted and decided upon any proposed amendments, it is voted upon by the full chamber as the second reading. If it successfully passes that vote, the amendments are incorporated and the third and final vote for passage is taken. This may already sound like a complex process, but each bill must pass through both the House and the Senate with identical versions. Differences between two versions must first be ironed out. Armed with the knowledge that the legislative session runs from only January through April, it becomes easier to understand why it is challenging for a bill to become a law.

To put this into perspective, consider the issue of collaborative drug therapy management. Currently, a limited form of collaborative drug therapy management is legal in Maryland with specific protocols and requirements which pharmacists must follow to be compliant with the letter of the law. This law very clearly expanded the scope of practice within the state of Maryland, and patients today benefit from the medication expertise which pharmacists exhibit when they optimize drug therapy and monitor labs. This issue was one of the first issues taken up by the Maryland Pharmacy Coalition, which was founded in 2000. It wasn't until 2010 when a preliminary version of the current law was passed; even then it included a sunset clause provision, which meant the law would expire unless the General Assembly decided to revisit the issue two years later. It took ten years of dedication, hard work, and testimony from pharmacists before the first signs of success became evident. Maryland pharmacy faced similar challenges in expanding the scope of practice for immunizations.

Part of the challenge lies in the fact that patients and other professions are affected by these pharmacy issues. With different interest groups and lobbyists representing other perspectives, many issues are immobilized as legislators piece together a framework for their own stance. Individual discussions to committee hearings, testimony submitted by registered lobbyists, licensed practitioners, and members of the public can influence the substance of a bill. When these lead to fundamental changes to the language of the law, it can strengthen or weaken its impact.

These same challenges exist even after a bill is passed into law. The development of regulations is as important, if not more important, than the passage of the bill itself. As an example, debate on the issue of provider dispensing has often centered around the definition of an accessible pharmacy. A 5-mile radius vs. a 15-mile radius has different implications for patient safety, pharmacy access, and pharmacy reimbursement.

G. Lawrence Hogue, Matthew Shimoda, Murhl Flowers, and Brian Hose shown at Legislative Day 2014

To maintain a steady presence and unified voice on pharmacy issues in Annapolis, the Maryland Pharmacy Coalition (MPC) came into existence in 2000. MPC, which is comprised of member organizations and schools of pharmacy, represents pharmacists from different practice settings. By bringing representatives from the organizations to the table, MPC develops consensus statements to effectively respond to legislative issues affecting pharmacy in Maryland. To provide an effective forum for engaging legislators regarding these bills, MPC organized the first annual Legislative Day. The consistent visibility and unified messaging presented annually at Legislative Day has raised the collective voice of pharmacy to the discussion table. The legislative successes over the past 14 years illustrate the patience and persistence which pharmacists have exhibited in building relationships with legislators in the 47 legislative districts. Today, Legislative Day brings over three hundred pharmacists and student pharmacists representing nearly all of the districts within the state, making an impactful statement as they educate legislators about pharmacy issues.

University of Maryland Eastern Shore School of Pharmacy's faculty and student pharmacists shown at Legislative Day 2014.

With momentum building for pharmacy provider status, MPC has taken a central position in engaging key stakeholders. A separate workgroup, chaired by Dr. Meghan Swarthout, was created last year to explore the possibility of having a legislative bill crafted to obtain provider status in Maryland. This effort has made great progress by bringing Delegate Joseline Pena-Melynk into the discussion. Amidst the national push for provider status, the workgroup continues to look for opportunities to educate legislators and expand the scope of practice within Maryland.

Wayne VanWie, Sam Houmes, and Christopher Charles shown at Legislative Day 2014.

Frontline pharmacists have been instrumental in bringing about the incremental changes that Maryland pharmacy has witnessed over the past 14 years. The Maryland Pharmacists Association is spearheading a new collaborative effort with all pharmacists in the state of Maryland through the creation of Legislative Action Teams. These pharmacist teams are divided based on legislative topics of interest, and the intent of these teams is to engage legislators by providing first-hand accounts of the impact that the proposed bills have on pharmacy practice. Anyone interested in participating in advocacy should consider joining one of these action teams and become involved in Legislative Day. Want to get started? Contact the Maryland Pharmacists Association today or visit MPhA online at www.marylandpharmacist.org for more information!

MPC Members that participate in Legislative Day:

Maryland Pharmacists Association

Maryland Society of Health-System Pharmacists

Maryland Chapter of the American Society of Consultant Pharmacists

Maryland Pharmaceutical Society

Notre Dame of Maryland University SGA

University of Maryland SGA

University of Maryland Eastern Shore SGA

Notre Dame of Maryland University School of Pharmacy

University of Maryland School of Pharmacy

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DC Chapter of the American Colleges of Clinical Pharmacy

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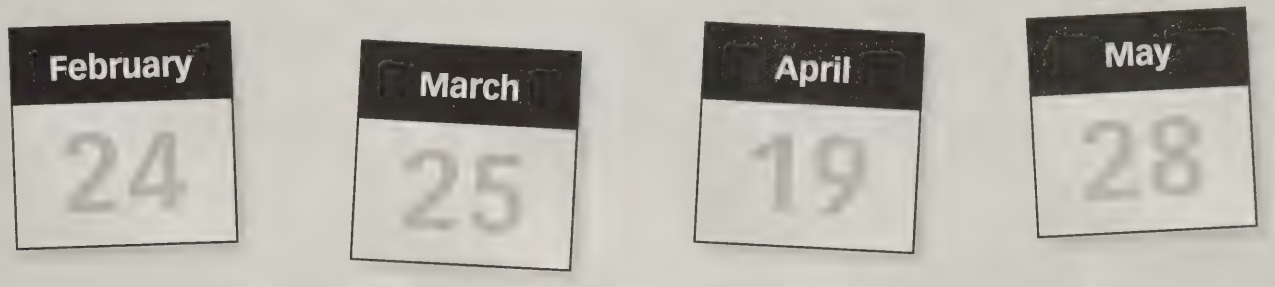

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Brittany Davis, 2015 PharmD Candidate, University of Maryland School of Pharmacy

Jill A. Morgan, PharmD, BCPS, University of Maryland School of Pharmacy

The Skinny on Newbie Skin Care

Skin care is important to the health of every newborn. For this article, a newborn is defined as less than or equal to 6 months of age. Newborn skin acts as an immunologic and physical barrier, essential for maintaining the health of the baby.[1] Neonatal skin, or skin within 1 month of birth, is thinner, more sensitive, and more absorptive of water and other chemical ingredients.[1] These qualities, which make newborn skin different from adult skin, create challenges in care. Parents often require guidelines on bathing and moisturizing, cord care, sun protection, diaper dermatitis (diaper rash), and harmless skin conditions for their newborn. Pharmacists have the opportunity to improve the health of newborns by recommending appropriate skin care to parents.

Learning Objectives: After reading this article, the learner will be able to:

1. Recommend a basic bathing and moisturizing regimen for a child less than 6 months old.
2. Develop an education plan for parents for umbilical cord care.
3. Recommend sun protection for a child less than 6 months of age.
4. Develop an education plan and treatment recommendations for diaper dermatitis.
5. Be able to describe and recognize three harmless skin conditions seen in newborns.

Key Words: Infant, Diaper dermatitis, Cord care, Sunscreen

Cord Care

Caring for the umbilical cord stump may be daunting for parents. Emphasizing the simplicity of cord care and when to contact the pediatrician are roles the pharmacist can fill. It is important to inform parents that there are no nerves in the cord, so therefore cord care is not painful for their child.[2] Keeping the umbilical stump clean and dry is the main priority.[1]

Parents should wash their hands thoroughly before caring for their infant's skin and umbilical stump.[1] Simply washing off debris with warm water is usually sufficient, along with tucking the diaper under the umbilicus to keep it exposed to air or using newborn diapers with the notch for the umbilical stump.[3] The use of antiseptics, such as chlorhexidine, triple dye, and bacitracin daily, vary around the world and even between institutions.[1] The World Health Organization 2004 guidelines recommend that umbilical stumps of babies in developed countries, where there is a lower risk of infection, be washed with water and mild soap.[1] Parents should clean the stump with mild soap and water with each diaper change and babies should not be submersed in bath water until the stump falls off. Babies only need sponge cleaning before they lose their umbilical stump. Using topical antiseptics/antimicrobials is not

recommended in the United States because there is a risk of toxicity from the chemical agents.[1] The use of alcohol in cord care may also increase the incidence of infection and delay cord separation or healing and is no longer recommended.[4]

The umbilical stump is expected to fall off or separate within approximately 9 to 15 days after birth.[3] A small amount of discharge is to be expected after the cord stump falls off, but parents should contact their infant's pediatrician if they notice more than minimal discharge, the stump is red and swollen, the stump is foul smelling, or if there is yellow pus or significant bleeding from the umbilical stump at any time.[3] Once the umbilical stump falls off, the baby's belly can be immersed in bath water.

Bathing & Moisturizing

Newborn skin is more sensitive to drying and should be treated differently than adult skin.[1] Sponge baths are recommended to clean newborns because it is easier to control where the baby is washed.[3] Bathing should be used as a way to remove irritants from newborn skin and is recommended about every 3 days for the first 3 months of life.[5] Bathing a baby everyday can lead to drying of the skin, then skin breakdown, which puts the baby at risk for infections.[3] Tap water alone will sufficiently clean the newborn, but a mild cleanser with a neutral pH, formulated for babies can be used as well.[3] It is recommended by the Association of Women's Health Obstetric Neonatal Nursing (AWHONN) 2013 standards that cleansers are in a liquid form and contain emollients. In addition, the cleansers should have a mildly acidic pH and contain no formaldehyde or parabens. See Table 1 for example cleanser recommendations. Also, it is important to use warm water and to keep the umbilical cord area dry in the time before it falls off.[5] Bathwater should be about 90-100 degrees Fahrenheit and the pharmacist should recommend that parents decrease their hot water heater to less than 120 degrees Fahrenheit.

Most newborns do not require the use of skin moisturizers, but certain products are preferred if the baby's skin is too dry. If parents notice dry or cracking skin, recommend the use of a baby formulated emollient. Lotions that are oil-based and hypoallergenic can help protect and develop the epidermis.[1,3] Petrolatum-based lubricants are safe and effective, as well as barrier-type lubricants, such as zinc oxide.[3] Powders of any type are consistently discouraged throughout childhood because of the risk of aspiration.[3] It is recommended to avoid products with olive oil, soybean oil, and mustard oil since these products can alter or break down the skin barrier on babies. See Table 1 for example moisturizer products for newborns.

When newborns are properly bathed and moisturized, the risk of infection and other skin conditions decreases. Simple recommendations for skin care can make a large impact on the health of babies. See Table 2 for general newborn bathing tips.

Table 1: Product recommendations for infants[18,19]

	Product Recommendations
Mild Cleansers (meets AWHONN Standards)	Johnson's Baby® Head to Toe Wash Baby Magic® Hair & Body Wash Burt's Bees® Baby Bee Shampoo & Wash
Moisturizers	Aquaphor® Aveeno® Baby Lotion Daily Moisture Aveeno® Calming Comfort Baby Lotion Aveeno® Baby Daily Moisture Lotion with Natural Colloidal Oatmeal Johnson's Baby® Lotion Johnson's Baby® Naturals Lotion Vaseline®
Sunscreens (meets Skin Cancer Foundation Seal of Approval)	Banana Boat® Natural Reflect Baby Sunscreen Lotion Neutrogena® Pure and Free Baby Sunscreen • Tip: check for products with word Baby in name (not babies or baby's)
Diaper Rash	Aquaphor® Vaseline® • Petroleum Jelly Deep Moisture Creamy Formula Tube to Prevent Diaper Rash • Pure Petroleum Jelly Jar For Baby, Creamy Formula, Enriched with Vitamin E Zinc Oxide Paste • Desitin® • Desitin® Creamy • Triple Paste® • A+ D® Ointment with Zinc Oxide

Sun Protection

Infants are especially vulnerable to ultra violet radiation (UVR) because they have a thinner stratum corneum, less melanin, and a higher surface area to body mass ratio compared to older children and adults.[6] It has been found that too much sun exposure at an early age is linked to skin cancer development.[6] If healthy sun protection habits are put into place at a very early age, the risk of skin cancer can be dramatically

reduced. Sunburns in children remain very common, even reaching an 83% incidence in the summer.[6] Through surveys used in a study by Paller et.al., pediatricians have expressed the importance of sun protection, but are unable to counsel patients in every age group.[6] Pharmacists can emphasize the importance of sun protection to parents and their children and give recommendations throughout the child's life.

Sun avoidance is the recommendation for children under 6 months old.[6] Sunscreen safety has not been proven in this young age group.[1] Strategies to protect the skin from the sun include staying in the shade, wearing tightly woven clothes that cover the skin, and employing a hat with a brim to cover the face and neck.[7] More specifically, fabrics should not be sheer and should be made from synthetic materials, not cotton, in order to best block UVR.[7,8] Sunglasses with broad spectrum coverage and 99% protection are recommended in all children.[8] It is important to remind parents that skin can burn on cloudy days and in the winter.[9] Small amounts of sunscreen, such as to the cheeks and backs of hands, can be applied if it is impossible to avoid sun exposure.[7] Zinc oxide-containing products may be the best to recommend, due to minimal absorption.[1] Sunscreen products should have a sun protection factor of at least 30.[10] It is recommended that sunscreens are applied 30 minutes before the baby is exposed to the sun, and every 2 hours especially after perspiration or water exposure.[8] Sunscreen sprays are not recommended due to the risk of inhaling the product and less skin coverage than sunblock lotions.[8] See table 1 for example sunscreen products for infants.

Reducing the sun exposure of the whole family and encouraging sun protection measures such as wearing protective clothing and staying in the shade, will improve the skin health of the infant.[11]

Diaper Dermatitis

Diaper rash, or diaper dermatitis, is the most common skin condition of infants in the United States.[12] Prevention of diaper dermatitis should be emphasized to parents. Proper bathing, moisturizing, and diaper changing are crucial for reducing the risk of diaper dermatitis. Most cases of diaper dermatitis are due to irritants, such as urine and feces, making prolonged contact with the infant's sensitive skin.[12] Fecal enzymes are activated by the heightened pH of diaper-wearing skin, and also contribute to the development of a rash.[12] The rash is indicative of the breakdown of the stratum corneum, which results in the weakening of the physical barrier of skin.[12] Infections, including yeast infections from Candida albicans and bacterial infections from Staphylococcus aureus, can also develop.[12] Although most cases of diaper dermatitis are not severe, diaper dermatitis can lead to ulcerated lesions if left untreated.[1] The highest risk of developing diaper dermatitis is within the first 2 years of life.[12]

Erythema in areas that have the most contact with the diaper is most likely diaper dermatitis.[12] Diaper dermatitis can be prevented by good diaper hygiene and, if desired, gentle creams and ointments that protect the skin.[13] Mild cases of diaper dermatitis can be soothed with these products, which often contain zinc oxide or petroleum jelly.[14] It is necessary to refer the child to the pediatrician when the rash appears swollen, is severe, shows no improvement, has been present for more than 1 week, has spread beyond the diaper area, or has bumps of any kind.[13,14] The addition of papules and pustules may indicate that a yeast infection is present.[12]

Prevention of diaper dermatitis is best. Recommend to parents to frequently change the baby's diaper to avoid irritation from fecal enzymes or wetness and then protect the

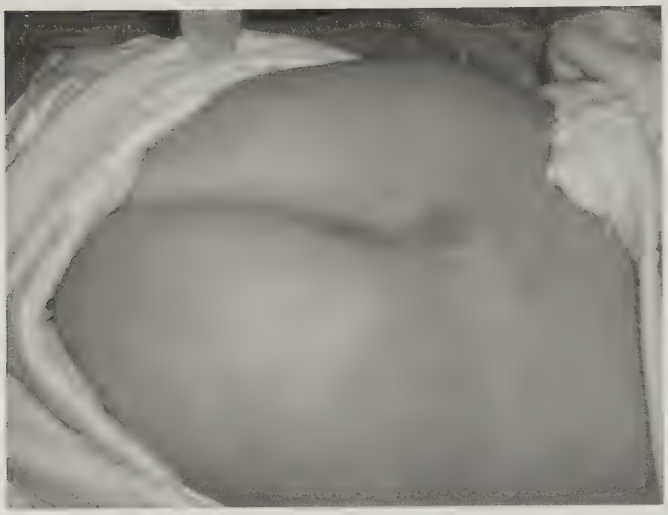
Table 2: Bathing Tips Box[5,13,14,20]

- Use warm, not hot water to bathe baby.
- Support the baby's head and neck while bathing.
- Wash the baby from head to diaper area.
- Don't ever leave the baby alone in the bath.
- Don't add oil to the bath or to baby's skin: this makes the baby's skin very slippery and may dry the baby's skin.
- Use a warm wash cloth on the belly.
- Have a towel nearby for drying off to prevent the baby from becoming too cold.
- Pat the baby dry.
- Massage can relax the baby, improve sleep, and help with bonding.

Table 3: Safe and unsafe diaper rash ingredients[17]

Recommended skin protectants by FDA	Ingredients to avoid in diaper rash products
Cocoa butter	Aloe vera
Colloidal oatmeal	Bovine collagen
Glycerin	Castor oil
Kaolin	Peruvian Balsam
Lanolin	Sodium bicarbonate
Mineral oil	Silicone
White Petrolatum	Sweet clover
Zinc acetate, carbonate, or oxide	St. John's Wort
	Tea tree oil
	Vitamin A, D, or E
	Witch hazel

Figure 1. Mongolian Spots on Sacral Area and Buttocks of Newborn[21]



Mongolianspotphoto by Abby Lu, available under a Creative Commons Attribution License 2.0 at http://en.wikipedia.org/wiki/Mongolian_spots#mediaviewer/File:Mongolianspotphoto.jpg.

skin with zinc oxide or petrolatum, which will create a barrier against the baby's skin. When choosing a product, be sure to avoid powders due to aspiration risk and avoid cornstarch due to risk of a Candida infection. Also, the Food and Drug Administration (FDA) has a list of ingredients that are non-approved protectants due to the risk of irritation or allergic reactions. Some of these non-approved ingredients are boric acid, aloe vera, castor seed, rose hip oil or tea tree oils (found in Bum Boosa® or California Baby® Non-burning & Calming Diaper Area Wash), dry milk (found in First Years® Bottom Care Diaper Relief System), and Arnica®. See table 2 for approved and non-approved ingredients in diaper rash products.

Harmless Skin Conditions

Pharmacists can differentiate between harmless skin conditions and potentially harmful neonatal skin conditions. Parents, especially first time parents, may not be familiar with newborn skin and may worry their child's skin condition is serious. Pharmacists can put parents at ease by recognizing three benign skin conditions: Mongolian spots (dermal melanocytosis), neonatal cephalic pustulosis (formerly neonatal acne), and milia (see Figures 1, 2, and 3).[15]

Mongolian spots are found on the majority of African-American, Asian, and other dark-skinned ethnicity infants.[15] These macules range from gray to dark blue-black and can be found anywhere on the body, although they are usually found on the buttocks and lumbosacral area.[15] Mongolian spots do not need to be treated and usually fade by the time the child reaches seven years of age.[15]

Neonatal cephalic pustulosis was formerly known as neonatal acne because these papules and papulopustules resemble adult acne.[15] This skin condition affects about 20% of newborns and can be present at birth or develop within the first three to four weeks postpartum. It may cover the face, neck, and upper body.[15] This condition is believed to be a yeast (*Malassezia* sp.) overgrowth due to sebaceous gland stimulation by maternal and infant androgens and is harmless.[15] Recommend to parents to keep the infant's face clean and dry. Avoid lotion or oil on the face and parents should not pick or scrub the acne. The acne should clear up spontaneously by four months of age. Educate parents about signs of a bacterial skin infection, which can occur if the infant scratches these lesions. Parents should watch for pus oozing from the lesions, swollen or open skin, or skin that is red and warm to the touch. If this occurs, the infant will need to see their pediatrician. For severe cases of neonatal acne or cases that last several months, 2.5% benzoyl peroxide lotion may be used if recommended by the pediatrician.[16]

Figure 2. Neonatal Acne on Infant's Forehead[22]

Neonatal acne on the forehead of an infant by Sage Ross, available under a Creative Commons Attribution-ShareAlike License 3.0 at http://en.wikipedia.org/wiki/Neonatal_acne#mediaviewer/File:Neonatal_acne_on_the_forehead_of_an_infant,_2009-10-18.jpg.

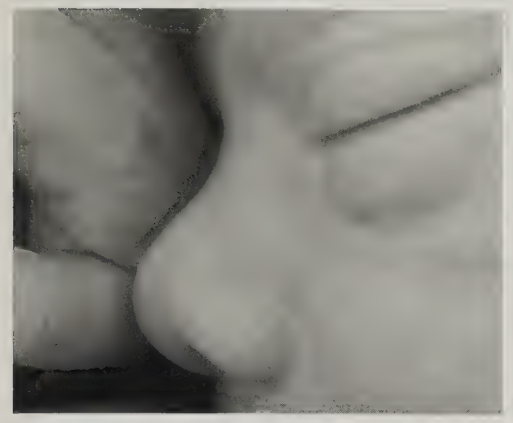
Milia are small, hard, white-yellow papules containing keratin that form in the upper part of the hair follicles.[15] They develop on the neonates' face spontaneously and often disappear just as quickly after one to three months.[15] About 40% of newborns will develop milia.

Pharmacists can encourage parents to continue to observe their child's skin, but not to worry about these three harmless skin conditions. If parents have additional questions and concerns, encourage them to talk to their pediatrician.

Conclusion

Babies who are less than six months old have unique skin care requirements. Pharmacists are in a distinct position to make recommendations to parents that will ensure that their newborn's skin will be healthy from the beginning of life into adulthood. Cord care, which may be intimidating for parents, is simple. The cord area should be cleaned with water or with the addition of soap when dirty, as well as kept clean and dry for the few weeks it takes for the umbilical stump to naturally fall off. Bathing the newborn with a sponge bath every few days is usually sufficient to keep the baby's skin moisturized. Mild cleansers are recommended and moisturizers may be needed. The covering of skin is necessary for sun protection in newborns and small amounts of zinc oxide can be applied if sun exposure cannot be avoided with clothing or shade. Diaper dermatitis, a common skin condition, can be prevented by frequent diaper changes and keeping the diaper area clean and dry. Protectant baby skin products that contain zinc oxide or petroleum jelly can help prevent and treat minor diaper dermatitis. Pharmacists can

Figure 3. Newborn Milia[23]



Newborn Milia (Milk Spots) by Serephine, available under a Creative Commons Attribution Public Domain Dedication License at http://en.wikipedia.org/wiki/Milia#mediaviewer/File:Newborn_Milia_(Milk_Spots).jpg.

assess whether the newborn should be referred to the pediatrician with simple questions about the description of the rash (swollen, bumps), effectiveness of current or past treatment, and frequency of the rash. Harmless skin conditions can be identified and worries can be resolved. Pharmacists can make a significant impact on the health of newborns by engaging parents in proper skin care for their newborn.

Sidebar: Newborn Skin Care Case

A nervous-looking mother approaches your pharmacy counter and has a few questions about the skin care of her 7 day old baby that she sets beside her in a carrier. The mom is not sure how to take care of her baby's umbilical cord stump. She asks if the cord stump is supposed to leak and when it is supposed to fall off. Also, she wonders when she should give her baby her first bath. She mentions that the family is going to the beach in a few weeks so she wants to know what sunscreen she should apply to her baby's skin.

WHAT ARE A FEW INITIAL QUESTIONS THAT SHOULD BE ASKED ABOUT A PEDIATRIC PATIENT, ESPECIALLY BEFORE MAKING RECOMMENDATIONS FOR SKIN CARE?

- How old is the baby and was the baby born full term?
- What medications is the baby on and/or what products do the parents currently use?
- Does the baby have eczema or allergies?
- Is there a family history of eczema or food allergies?

WHAT SIGNS AND SYMPTOMS OF THE CORD STUMP WOULD WARRANT A VISIT TO THE PEDIATRICIAN?

- Significant amount of discharge
- Foul smelling discharge or yellow pus
- Red and swollen stump
- Significant bleeding from stump

HOW LONG DOES IT TAKE FOR THE CORD STUMP TO FALL OFF?

- Approximately 9-15 days

WHAT CORD CARE WOULD YOU RECOMMEND TO THIS MOM IF THE CORD STUMP IS MINIMALLY LEAKING AND THERE ARE NO SIGNS AND SYMPTOMS THAT WOULD WARRANT A TRIP TO THE PEDIATRICIAN?

- Leaking from the cord stump is normal. It is important to keep the cord area clean and dry. Make sure to wash your hands before caring for the umbilical stump and wash off the cord stump with warm water. Tuck the diaper under the cord so that the stump is exposed to air.

WHEN SHOULD THE BABY RECEIVE HER FIRST BATH AND HOW OFTEN SHOULD SHE BE BATHED?

- Giving your baby sponge baths about every 3 days for the first 3 months will keep her clean. Baths for newborns are for removing irritants from the baby's skin. Tap water will be sufficient to clean the baby's skin. Make sure to keep the cord stump clean and dry. Once the cord stump has fallen off, then the baby can take a bath. Be sure to support the baby and keep a hand on the baby at all times while in a baby tub to prevent drowning.

WHAT SKIN PROTECTION STRATEGIES WOULD YOU RECOMMEND FOR A NEWBORN?

- Make sure to keep your baby in the shade when outside. Light and tightly woven clothes that cover your baby's skin along with a hat will help protect her skin.

WHEN WOULD YOU RECOMMEND THE USE OF SUN PROTECTION PRODUCTS FOR AN INFANT?

- If your baby's skin (e.g. face, arms) will be exposed to the sun, make sure to use sun block that contains zinc oxide, because this product is not absorbed into your baby's skin.

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Pharmacist Collaborative Practice

Collaborative practice agreements (CPAs) create a formal practice relationship between a pharmacist and another healthcare provider and specify what patient care services–beyond the pharmacist typical scope of practice–can be provided by the pharmacist.

By the Numbers

38 states allow pharmacists to initiate therapy under a CPA

48 states have some type of CPA law–only excluding Alabama and Deleware

30 states require no more than a pharmacy license to participate in a CPA

Patients Benefit

When pharmacists are on the healthcare team, health outcomes improve and costs go down. Pharmacists are highly accessible; more than 90% of Americans live within 5 miles of a pharmacy.

New in 2014

Tennessee

Public Chapter 832 (effective 07.01.14)

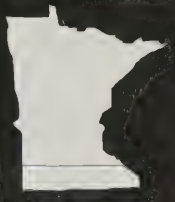
This language improves upon existing authority and authorizes one or more pharmacist(s) to provide patient care through a collaborative pharmacy practice agreement with one or more prescriber(s).

Wisconsin

Senate Bill 251 (effective 04.18.14)

This broad language in the pharmacy practice act clarifies that "a pharmacist may perform any patient care service delegated to the pharmacist by a physician." Previously the authority of a physician to delegate care only appeared in the medical practice act.

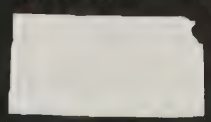
Minnesota



HB 2402/SB 2087 (effective 08.01.14)

This law expands existing collaborative practice language to authorize the initiation of therapy under a CPA, allows multiple pharmacists and multiple prescribers to be included on one agreement, and permits pharmacists to collaborate with nurse practitioners and physician assistants in addition to physicians.

Kansas



House Bill 2146 (effective 07.01.14)

This is new collaborative practice language that increases the total number of states with collaborative practice authority for pharmacists from 47 to 48. Regulations must still be developed for this law.

This information is based on data collected by the National Alliance of State Pharmacy Associations in 2014. For more information on your state's collaborative practice provisions, contact your state pharmacy association or state board of pharmacy.

Membership matters! Be sure to support your state and national pharmacy associations by joining and getting engaged.

A Memorable Experience as a Pharmacy Technician Instructor

Zakaria I. Ganiyu, MBA, MS, CPhT

It was the summer of 2006, and my wife and I just welcomed our first child, Jannat. Prior to Jannat entering our household, it had been just my wife and I enjoying our "couple hood" without the presence of any children. Needless to say, we were very excited to welcome Jannat as the newest member to our family. The excitement, however, would be short-lived because I did not expect the cost of diapers and baby formula to outweigh my yearly budget for Popeyes chicken.

I had the primary income, working full-time as a pharmacy technician at the National Institutes of Health Clinical Center in Bethesda, Maryland, while being enrolled in graduate school. My wife was also a nursing student, a semester away from graduating, before giving birth to Jannat. The situation was financially challenging. My wife suggested I drop my summer graduate course and pick up a part-time job at another hospital or retail pharmacy to make ends meet. My summer course was in its infancy, so I dropped it, and the tuition was fully refunded. I used the refund to fully resupply diapers from Costco.

Three weeks after dropping my class and actively searching for an evening part-time job, I received a call from an old friend asking if I would be interested in teaching a Pharmacy Technician Program in Baltimore for a vocation school. The only experience I had was being a Pharmacy Technician for ten years at various hospitals, but now I was being asked to teach. As previously indicated, times were very difficult, so I did not hesitate and quickly accepted the offer.

Like the welcoming of Jannat, I was very thrilled to find a second job as a Pharmacy Technician Instructor, despite not having any prior teaching experience. To my amazement, I actually felt comfortable applying skills I mastered for ten years as a pharmacy technician in the form of instructional guidance. The first course I taught was *Pharmacology*, which lasted approximately four weeks. The next course I was assigned to teach was *Pharmacy Calculations*, which would prove to be more challenging than I could have imagined. Approximately half of the students did not know basic math, and it was my responsibility to teach them grade-level math before reaching our objective level of pharmacy math. Approximately six out of fourteen students dropped the Pharmacy Calculations Course by the second week. I was at the brink of losing the very job I needed so much to supplement my income and to sustain my family and me. Some students were a couple of semesters away from graduating from the program, and the school did not want to see such a high volume of students resigning from the institution.

I took it upon myself to call every student and pleaded that each one return to school. I voluntarily stayed after school to tutor them to make sure each student fully understood the contents of the course. In the end, four students returned, which impressed my superiors as to how far I was willing to go to save my job. I was retained and continued teaching at the same institution for almost three more years. After more than eight years, I still teach the same program at a local community college in Columbia, Maryland.

It was a life lesson I would never forget, and I am so glad that I accepted the teaching opportunity my friend extended to me eight years ago. I still enjoy teaching very much and it continues to pay for diapers for our now three children.

CALL TO ACTION: PHARMACY TECHNICIANS

The Maryland Pharmacists Association is creating a Technician Network (TN).

The TN will be a venue for all pharmacy technicians to network and collaborate ideas and information to further professional development. The TN will be responsible for creating pharmacy technician events, developing continuing education topics, writing articles, and more! This is a great way to get involved in your profession and to take on a leadership role.

If you are interested in chairing TN or would like to receive more information, please email Kelly Fisher at kelly.fisher@mdpha.com.

Meet MPhA's New Executive Director!

Aliyah N. Horton, CAE

It is a privilege and an honor to be joining a dedicated community of professionals who play such a key role in the health and well-being of Maryland citizens and who positively contribute to the health of our state's business and academic sectors. I look forward to working with the Board of Trustees and MPhA members to build on this legacy.

Aliyah is a certified association executive (CAE) with more than 20 years of experience in public policy and the non-profit sector. She previously served as the Associate Executive Director for Strategic Initiatives and Government Affairs at the Institute of Transportation Engineers (ITE). Prior to her nearly 14 years at ITE, Aliyah was a legislative assistant to a member of the Maryland delegation to the U.S. House of Representatives. In addition, she served as a public policy specialist and lobbyist for InterAction, an alliance of non-governmental organizations based in Washington, DC.

Aliyah is a graduate of the American Society of Association Executives' Diversity Executive Leadership Program Class of 2010-2012. She holds a Bachelor of Arts degree from Smith College in Northampton, MA. She currently resides in Burtonsville, MD.

"The MPhA Board of Trustees is very excited to welcome Aliyah to our family," said President Dixie Leikach.

"The future of the Association is bright as the selection committee presented an excellent choice for our next Executive Director. She will be a fresh addition to the office and bring a new perspective to our association operations and strategic planning process. We look forward to working with Aliyah and beginning the new year with a new leader!"

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PHARMACISTS' PATIENT CARE PROCESS CONSISTENCY IS CRITICAL

FINDING BALANCE
This article will review age- and medication-related risk factors associated with falls in older adults.

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Maryland Pharmacist

Finding Balance

Preventing Medication-Related Falls through Appropriate Medication Use

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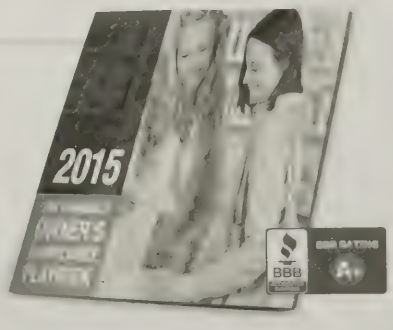

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MPhA
MARYLAND PHARMACISTS ASSOCIATION

We welcome your feedback and ideas for future articles for Maryland Pharmacist. *Send your suggestions to Kelly Fisher: Maryland Pharmacists Association, 1800 Washington Blvd., Ste. 333, Baltimore, MD 21230, call 410.727.0746, or email kelly.fisher@mdpha.com*

Special thanks to Graphtech, Advertising Sales and Design

Thank you to all of our members for this incredible honor to serve as your President. It is a humbling experience to serve as mentors of mine have served, including my husband Neil Leikach.

I hear a lot of "What is MPhA doing about (blank)?" or "Why isn't MPhA doing more about (blank)?" So let me review some of what MPhA is doing and has accomplished over the past months:

- A group of pharmacists are working with CRISP to obtain full access for community pharmacists. This is the first step of a long process to recognize individual pharmacists as health care professionals.
- I have been invited to join the MedChi Interdisciplinary Committee that discusses public health issues which is another step towards adding a pharmacist to the conversation among other health care professionals.
- Our own Vice Speaker of the House Chris Charles has worked tirelessly on the Medical Marijuana Commission and has increased awareness on how pharmacists can be involved in this conversation with other health care professionals.
- As a part of the Maryland Pharmacy Coalition (MPC), our members have been a part of the crafting of legislation to increase our scope of practice and streamline the collaborative practice agreement process. MPhA thanks those who volunteered on the MPC Provider Status Workgroup and Delegates Joseline A. Pena-Melnyk (D-21) and Susan W. Krebs (R-5) as well as Senator Catherine E. Pugh (D-40) for this tremendous effort. Over 350 pharmacists and student pharmacists took Annapolis by storm for Legislative Day. Many pharmacists took the day off to testify and to speak about bills that affect the practice of pharmacy.

Of course, there are plenty more examples. These accomplishments show pharmacists getting involved in the profession and representing MPhA in the health care community, but we need more! Your staff, Board of Trustees, and Executive Committee cannot do it alone.

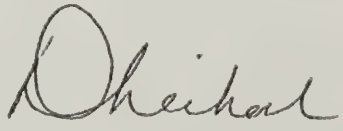
WE need YOU to get involved. We need you on committees, task forces, or just to read items of interest in the *Monday Message* and *Maryland Pharmacist*. We need you to tell us what information you want to see more of! All information can be sent to Kelly Fisher at kelly.fisher@mdpha.com.

WE need YOU to tell others about your experience. The Membership Committee, chaired by Julie Mathias and Tim Rocafort, are pleased to announce a referral program running until the Annual Convention. Your name will be entered into a drawing for every new pharmacist or pharmacy technician member you refer. You could win $250 for referring a pharmacist or $100 for referring a technician, as long as MPhA meets its goal. The more entries you have, the better your chances! The new member just needs to call the office and give your name as the referring member.

WE need YOU to share your voice. Your voice matters and we need to hear it! All dues paid members are welcome to attend our monthly Board of Trustees meetings. Upcoming dates are listed under our calendar on our website. Our Annual Convention is coming up on June 12-14 in Ocean City, MD. Members and nonmembers are invited to attend! Members should consider submitting a resolution for our House of Delegates. Members will also soon receive ballots to vote on MPhA's next set of Board of Trustees members. Two trustee seats and the vice president seat are up for election.

WE need YOU because this is YOUR Association. Our mission is to promote excellence in pharmacy practice, strengthen the profession of pharmacy, and advocate for all Maryland Pharmacists. MPhA is ONE Association for ALL. We need you to be a part of your Association.

Stronger by Association —



Dixie Leikach, RPh, MBA, FACA
President

Federal Provider Status

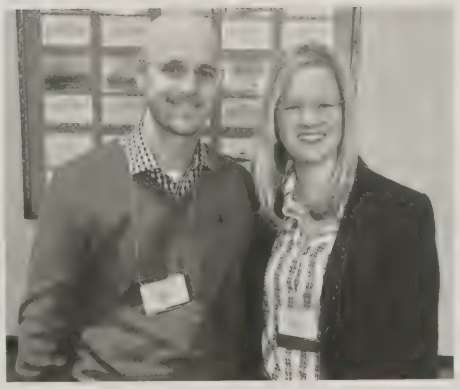
In January, The Pharmacy and Medically Underserved Areas Enhancement Act (HR 592/S314) was introduced in the U.S. Senate and House of Representatives. The bipartisan bill would enable patient access and coverage of Medicare Part B services by pharmacists in medically underserved communities. According to the US Department of Health and Human Services, in Maryland, 19 out of 24 counties and Baltimore City include primary care health professional shortage areas. The same bill introduced in the House last session had 123 bipartisan cosponsors, none of which were from the Maryland Delegation. MPhA is actively working to get our state representatives signed on to this important legislation that will improve patient access and care.

You are encouraged to contact your representatives and encourage them to cosponsor HR 592/S314 The Pharmacy Medically Underserved Areas Enhancement Act. To find your elected officials go to www.contactingthecongress.org. Former Speaker of the House Tip O'Neil, once said, "All politics is local." Make sure your "local" voice is heard.

2015 Mid-Year Meeting

On February 15, the MPhA/MD-ASCP/MPhS Mid-Year Meeting was held at the Conference Center at the Maritime Institute in Linthicum Heights, Maryland. Thanks to the dedication and hard work of the Maryland Pharmacists Association, Maryland Chapter of American Society of Consultant Pharmacists, and Maryland Pharmaceutical Society, the meeting was overwhelmed with positive feedback and compliments. A huge thank you to the nearly 200 attendees, speakers, and student volunteers who trekked the early morning cold, ice, and wind to attend the meeting.

The morning continuing education programs began with a new drug update, provider status update, and a pharmacy advocacy workshop. During lunch, MPhA held its House of Delegates Meeting and recognized three MPhA members, Cathy Wilson, as the first Technician of the Year Award winner, Christine Lee-Wilson, for her role as Chairman of the Board, and Dixie Leikach, as MPhA President. The nominated slate for the 2016 Board of Trustees was also announced. Two trustee seats and the vice president seat will be voted upon soon.



The nominees for the open positions are:

Trustee Seat (2)

- Larry Hogue
- Mary Kremzner
- Melvin Lessing
- Wayne VanWie
- Chai Wang

Vice President

- Kristen Fink
- Jennifer Thomas

The afternoon sessions included three tracks: MPhA, MD-ASCP, and technicians. Attendees came together to conclude the meeting with a final program on why and how you need to train your mental and physical abilities to succeed in the pharmacy profession. After a long, educational day, the New Practitioner Network hosted a networking happy hour after the meeting at the BWI Marriott which had a great turn out.

15th Annual Legislative Day — #MDPharmacyCares

On February 19, nearly 350 pharmacist professionals and students converged in Annapolis for the Maryland Pharmacy Coalition's (MPC) Annual Legislative Day.

MPC was created to provide a forum for discussion and understanding between Maryland's pharmacy associations on issues impacting the practice of pharmacy and the public's health. MPC membership

includes: MPhA, Maryland Branch of the American Society of Consultant Pharmacists, Maryland Pharmaceutical Society, Maryland Society of Health System Pharmacists, University of Maryland Baltimore School of Pharmacy Student Government Association, University of Maryland Eastern Shore School of Pharmacy Student Government Association and Notre Dame of Maryland University School of Pharmacy Student Government Association.

Chai Wang, MPhA's Legislative Committee Chair, played a key role in facilitating volunteer development of the program, meeting scheduling, app development and MPC legislative consensus statements.

The day kicked off bright and early with encouraging words from Delegate Joseline Pena-Melnyk (D-21). Armed with talking points, an app that included a video testimonial from a patient, district-based legislative teams canvassed House and Senate offices by attending scheduled meetings and drop-bys to review

MPC positions on pending pharmacy-related legislation. Participants were acknowledged in both chambers during the legislative session.

Using #MDPharmacyCares, participants shared their experiences throughout the day on Twitter and Instagram. Thank you to all the volunteers and participants whose presence demonstrated that indeed, Maryland Pharmacy Cares.

Building Our Future

MPhA's quest to find and build a new home is nearly complete. The demolition and construction is moving at a rapid pace. Located in Columbia, MD the building was picked as a more central location to create a welcoming space for members and to optimize technology to share professional development and learning opportunities. The Building Committee is diligently using organizational funds to design space and amenities that highlight the past and set the stage for the future. The Preservation Committee will be working with MPhA staff to curate historical pieces to better tell our story to members and visitors. You can view the ongoing progress of the building via MPhA's Facebook page.

To truly fulfill this mission, your support is needed. Please consider making a tax-deductible donation to the MPhA Foundation's Building fund. Visit marylandpharmacist.org to see available donation categories. To discuss other options or for more information contact aliyah.horton@mdpha.com or 410-727-0746.

New Practitioner Network

The New Practitioner Network (NPN) is here to help the New Practitioners (NPs) of Maryland find a home within the Maryland Pharmacist Association. NPN targets students in their final year at all universities in Maryland, encouraging involvement and volunteering within the network. The main focus of NPN is welcoming all NPs of the state with open arms and helping them to expand their networks. NPN hosted many events during the year in order to create a tight network for NPs to socialize with as well as form professional relationships. The Network hosts four Happy Hour socials per year to allow NPs to relax after work, form friendships, and ask professional advice, if needed. NPN is also present at MPhA's Mid-Year Meeting and Annual Convention, hosting a social gathering at each and working to recruit new members.

This year, NPN provided a continuing education session at the Mid-Year Meeting regarding current trends in community and ambulatory care geriatrics practices. NPN has also hosted break-out sessions at multiple Board of Trustees meetings focused on topics pertaining to the potential struggles of NPs as they work through their first

few years as pharmacists. These have touched on a few different topics, including leadership and vaccines. In addition, each year NPN hosts a Graduation Social to bring together the pharmacy schools in the state and celebrate graduating students' successes while encouraging them to continue to be active members of MPhA. This year's Graduation Social will be at the Waterfront Hotel in Fells Point located in Baltimore, MD on **Saturday, May 2**.

This event brings Board of Trustee Members as well as NPN to create a balanced atmosphere so the soon-to-be graduates can begin and start to hone their networking skills within their home state. For more information on the Graduation Social, visit www.marylandpharmacist.org. NPN is always looking for new members and is a way for resident NPs and new to the state NPs to connect.

Technicians

Congratulations to the candidates from Maryland who passed the Pharmacy Technician Certification Exam from July-December 2014!

Sefiyatu Abedoh
Dijo Abraham
Prasad Abraham
Terisha Adams
Afsah Afzal
Habeeb Agbabiaka
Moses Agbonavbare
Christie Agwamba
Taimoor Akbar
Ikha Al Azzawi
Jaclyn Anderson
Janay Anderson
Cyrille Asima
Zachary Atkinson
Aasher Awan
Albert Ayernor
Nevawanna Baccous
Charles Bailey
Oue Barro
Jiksa Bedada
Vera Bek
Tameka Bennett
Robert Berman
Brandon Bong
James Robert Book
Daniel Boring
Kaitlyn Borries
Idris Boundaoni
Carleah Bowling
Katherine Bredlow
Alice Breen
Valerie Brinsfield
Thomas Brock
Jamie Brown
Robert Brown
Andrew Browne
William Bush
Lauren Campbell
Brittany Carpenter
Abigail Carpentier
Carrie Carter
Paul Cataldo
Alvin Chan
Imani Charles
Veronica Chavarria
Jennifer Chen
Lydia Chou
Jae Hae Chung
Madigbe Cisse
Anthony Craig
Lisa Cusick
Christopher Danlag
Tamela Davis
Cherica Day
Mildres De los Santos
Aleena Deen
Joseph DeSimone
Reena Devgan
Jamie Dickey
Alireza Divani
DeVon Doye
Tierra Dunnock
Nenghui Eddy
Emad Elassal
Colleen Ellis
Elizabeth Emerick
Latisha English
Seungil Eo
Ketsia Erra
Molly Fabricatore
Aya Felder
Stephanie Fennell
Devin Finch
Julie Flinchum
Jennifer Frantum
Patrick Freimuth
Mitchell Frieler
Lavanya Gandla
Anna Gannon
Christian Gardner
Denzel Garraway
Anne Gatch
Amber Ghaemi
Saba Gharavi Neisiani
Kelli Gierula
Michael Gilbert
Adam Glover
Hardipsinh Gohil
Nathan Goldentayer
Minerva Granados Carranza
Jeffrey Granja
Morgan Gratton
Geri Gross
Dennis Grossman
Gloria Gyeni
Fouzia Hakim
Alonda Hall
Kierra Hall
Angela Hamilton
Rex Hammer
Steven Hammon
Meredith Hatzinikolas
Melissa Hendrickson
Kashif Hira
Taylor Hunt
Tamira Hurell
Oluwatosin Idowu
Javonnia Jackson
Monica Jackson
Shakema Jackson
Yoosoo Jang
Eric Jankowiak
Pamela Jernigan
Rachel Jin
Bernadette Johnson
Jasmine Johnson
LaTrise Johnson
Rena Johnson
Shawntae Johnson
Tamira Johnson
Julia Jones
Dominique Jordan
Alexandra Jossa
Samantha Kamm
Saritha Kandagatla
Bristol Kearney
Jarrett Kearse
Jason Keung
Fahad Khan
Nancy Kraft
Brianna Krebs
Francis Ku
Monica Kunkle
Shaina Kyle
Kantame Landjergue
Jessica Lantz
Yong Hun Lee
Kimberly Lefler
Brieana Lewis
Cassie Lipscomb
Anton Lomax
Holly Long
Stacy Ludloff
Matthew Luen
Kana-Ahsabi Mack
Alexander Malyshev
Regina Marsh
Megan Mayhue
Pamela McShane
Gebremedhin Melaku
Lieschen Metzger
Tamara Mlynarik
Neni Mokube
Jocelyn Morris
Kioriandra Moses
Jeya Moses-Salagala
Evelyne Mugo
Morris Mugo
Christine Mukayiranga
Annette Murray
Stefanie Muse
Sulaiman Mustafa
Lori Neely
Shayquon Neely
Sumanth Neerumalla
Lilian Ngang
My Ngo
Noel Njem
Kingsley Obi
Johnson Ogunsola
Ashya Owens
Jacqueline Pagan
Shubhangi Pai
Feni Patel
Jyotika Patel
Tina Patel
Cheryl Paterno
Lee Pierce
Shalonda Pinkney
Nishad Rahman
Rishma Rahman
Rhea Ramakrishnan
Gebrehiwot Reda
Darlene Resnick
William Ricketts
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Rosa Rivas de Soto
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Nicole Yarosh
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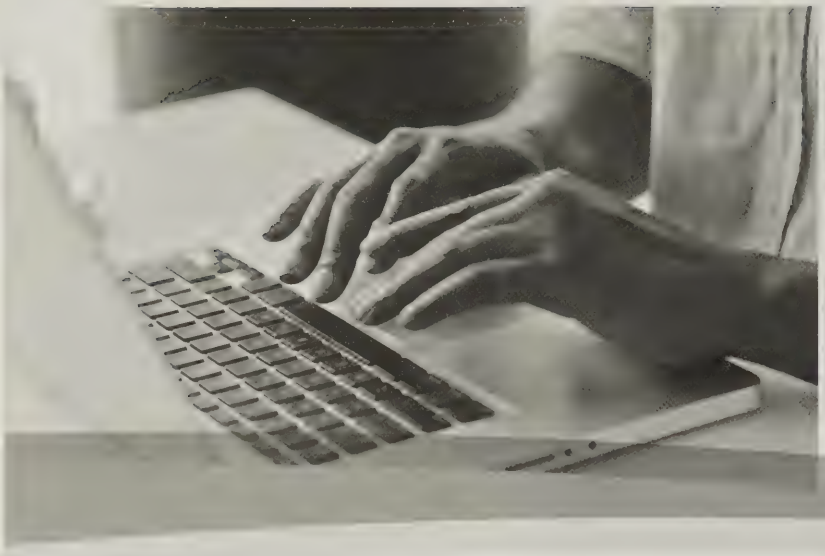

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Visit ***www.pharmacy.umaryland.edu/pharmacometrics*** for more information and to attend a virtual open house.

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Shalendra Cherukuri
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MPhA

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Electronic Cigarettes and Electronic Nicotine Delivery Systems

By: James L. Bresette, PharmD

Electronic cigarettes (e-cigarettes) and Electronic Nicotine Delivery Systems (ENDS) use are increasing socially not only by tobacco users as a means to replace or cut back on traditional cigarettes, but by non-tobacco users too. The devices consist of a cartridge or chamber containing nicotine, propylene glycol, glycerol, water and flavorings combined with a battery-operated heating element. This gives users the feeling of smoking while exhaling the vapor. University of Geneva public health professor and tobacco researcher Jean-Francois Etter conveys the appeal as "E-cigarettes provide nicotine, and they also provide flavor, the gesture, the throat hit that smokers want, and the visible vapor — all of these things together explain why the product is so successful."[1]

Since the device was patented in 2007 and subsequently became available in the United States, e-cigarettes revenues have doubled annually.[2] In 2014, the World Health Organization estimated 466 brands were available and over $3 billion were spent on ENDS globally.[3]

However, in terms of public health, there is both the belief that ENDS are a serious means to help current tobacco smokers quit while other public health professionals fear that this trend toward "vaping" may serve as a gateway to conventional cigarettes. In fact, according to the National Institute on Drug Abuse-funded *Monitoring the Future* (MTF) 2014 survey, smoking traditional "combustibles" has decreased over the past five years among adolescents.[4]

The survey characterized teen use as "high," although 2014 was the first year the MTF included teen e-cigarette use. Additionally, the MTF survey does not determine if teen ENDS users may have been potential tobacco smokers who opted for e-cigarettes instead. Conversely, in a cross-sectional survey of 215 Midwest adults, 86% reported using ENDS as a means of smoking cessation. Among tobacco and ENDS "dual use" participants, the average daily cigarette consumption decreased from 22.1 to 7.5. Of the 181 in the survey subset who verified non-smoking status by completing an exhaled carbon monoxide test, the readings confirmed 66% had quit smoking.[5]

While these federally unregulated devices are currently being reviewed by the Food and Drug Administration's Center for Tobacco Products, some states and local jurisdictions have passed laws regarding public use and sales to minors. In Maryland, the Montgomery County Council voted in March to ban e-cigarette use in all places where traditional tobacco smoking is prohibited.[6] The vaping industry associations and businesses have also advocated restricting sales to minors and safe use of flavorings.

It is yet unclear how much room exists for agreement between the total nicotine abstinence and the harm reduction camps, though both would generally agree that ENDS use delivering only nicotine and safe flavorings are less harmful than conventional cigarette use. In a January 2014 Journal of the American Medical Association editorial, David Abrams, PhD, of the Schroeder Institute for Tobacco Research and Policy Studies, Johns Hopkins' Bloomberg School of Public Health and the Georgetown University Lombardi Comprehensive Cancer Center, wrote, "There's every indication that e-cigarettes may be both a safe and appealing way to get your nicotine."[1,2] Clearly, the ENDS is not near; it's here.

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MARYLAND MEDICAID

Ready to Switch to NADAC Pricing

By: Brian Hose, PharmD

If you haven't heard of the National Average Drug Acquisition Cost (NADAC), you are not alone. Many of our pharmacy counterparts were just hearing about it for the first time at Maryland Medicaid's March 10th meeting to discuss their new pharmacy pricing formula. NADAC is an average acquisition price maintained by the Centers for Medicare & Medicaid Services that is determined by weekly pricing surveys which are sent to randomly chosen pharmacies. Those surveys and the resulting NADAC file report a simple average actual purchase price for the vast majority of products dispensed by retail pharmacies. This file is set to become the new instrument used to determine pharmacy reimbursement rates under the new Medicaid payment model outlined in the accompanying table. The file is published monthly and can be found at www.medicaid.gov by searching for NADAC.

New Reimbursement Methodology

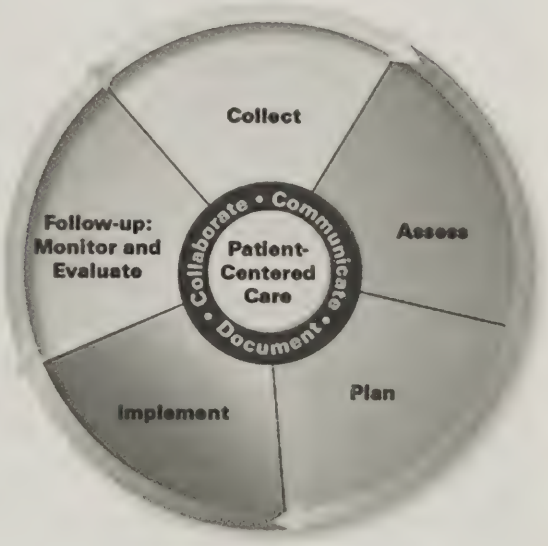
Prescription	Pricing Condition	Payment is lesser of	Allowable Cost (lesser of:)
Regardless of Drug Category	At least one NADAC price available	1) Usual and Customary (U/C) 2) Allowable Cost + Dispensing Fee	1) NADAC 2) Federal Upper Limit (FUL) 3) State determined Actual Acquisition Cost (AAC)
Regardless of Drug Category	No NADAC available but Wholesale Acquisition Cost (WAC) available	1) U/C 2) Allowable Cost + Dispensing Fee	1) WAC 2) FUL 3) AAC
Regardless of Drug Category	No NADAC available and no WAC available	1) U/C 2) Allowable Cost + Dispensing Fee	1) AAC 2) FUL
Condoms	NADAC price available	1) U/C 2) Allowable Cost + 50%	1) NADAC 2) FUL 3) AAC
DAW 1 and DAW 6	No NADAC available but WAC available	1) U/C 2) Allowable Cost + Dispensing Fee	1) NADAC 2) AAC
DAW 1 and DAW 6		1) U/C 2) Allowable Cost + Dispensing Fee	1) WAC 2) AAC

Maryland is joining several other states including Delaware, Alaska, Alabama, Idaho, Iowa, Louisiana, Oregon, and Colorado who have already moved to an acquisition cost based model. Many of you will remember the cost of dispensing survey that was conducted by the Department of Health and Mental Hygiene in summer 2011. This survey and the resulting weighted median dispensing cost of $10.49 ($11.49 for long term care patients) is the basis of the dispensing fee that the Medicaid program will be paying once NADAC pricing is implemented. Additional information can be found in the "New Reimbursement Methodology" document on the Maryland Pharmacy Program Homepage at https://mmcp.dhmh.maryland.gov/pap/SitePages/paphome.aspx.

Pharmacists' Patient Care Process: Consistency is Critical

By: Joint Commission of Pharmacy Practitioners

Recognizing the need for a consistent process in the delivery of patient care across the profession, the Joint Commission of Pharmacy Practitioners (JCPP)[1] recently released the *Pharmacists' Patient Care Process*. The process is applicable to any practice setting where pharmacists provide patient care and to any patient care service provided by pharmacists. This article describes the development of the *Pharmacists' Patient Care Process*, what the process is, why it's important, and the initial steps necessary for its implementation.



The Foundation

In July 2013, pharmacy and other allied health thought leaders revised JCPP's vision statement for the pharmacy profession and the accompanying strategic plan to reach this vision. The newly adopted vision statement, "Patients achieve optimal health and medication outcomes with pharmacists as essential and accountable providers within patient-centered, team-based health care," reflects the need for pharmacists to be patient-centered and accountable for patient outcomes while working collaboratively with other members of the health care team.

Key drivers to achieving the JCPP vision include: 1) a widely-adopted and consistently delivered patient care process, 2) quality metrics to measure the value of pharmacists' services, 3) robust health information technology to support patient care, and 4) payment for pharmacists' services.

The need for pharmacists to use a consistent approach to patient care delivery has always been important. However, with the increasing movement towards outcomes-based payment models in the health care system, this need is becoming more urgent. Payment models that reimburse health care professionals for achieving desired outcomes for their patients are starting to emerge (e.g., patient's blood pressure at goal) rather than payment by the number of patient visits they complete. These emerging payment structures dictate that pharmacists must use a consistent care delivery process to measure the outcomes of their services in a meaningful way. That way an "apples to apples" comparison can be made for the collective value that pharmacists provide within the health care system.

Building upon the newly revised vision statement and considering the key drivers for its achievement, a group of national pharmacy organizations worked under the direction of JCPP to develop the *Pharmacists' Patient Care Process.* The foundation for

the process is embedded within the pharmaceutical care model developed by Hepler and Strand in the 1990s and was developed by examining a number of key source documents on pharmaceutical care and medication therapy management. These key documents were cataloged and compared to create a patient care process consistent with best practice models in pharmacy. The *Pharmacists' Patient Care Process* structure aligns with the patient care processes of other health care professionals, yet also details the unique medication-related aspects of pharmacists' training. The development process included organizational comment periods and testing with clinicians to create the document ultimately approved by JCPP on May 29, 2014.

What is the *Pharmacists' Patient Care Process*?

The *Pharmacists' Patient Care Process* uses a patient-centered approach that depends first and foremost on the pharmacist establishing a relationship with the patient. This relationship supports engagement and effective communication with the patient, family members, and caregivers throughout the process. The process also involves the pharmacist working with prescribers and other practitioners to optimize patient health and medication outcomes (see page 15).

The follow-up step in the *Pharmacists' Patient Care Process* indicates that the process is repeated with each and every patient encounter, and the frequency of follow-up depends on the acuity of the patient and the nature of their care. The level of intensity for each step will vary with the service provided, but the process should not vary. The process is intended to be used in all patient care settings, and while one pharmacist might be responsible for all the steps in some settings, in other settings, there may be more than one pharmacist involved at each stage of the process.

Pharmacist Involvement

National pharmacy associations are currently working to facilitate implementation of the process across the profession, including developing case examples for different practice settings. The Accreditation Council for Pharmacy Education (ACPE) has incorporated the *Pharmacists' Patient Care Process* into the Draft Standards 2016 revision for the Doctor of Pharmacy curriculum. The standards were scheduled to be considered for final approval at the January 2015 ACPE Board meeting and to be distributed profession-wide shortly thereafter. With the ACPE Standards revision, schools and colleges of pharmacy will work to incorporate the process into their curriculum. ACPE-accredited continuing education providers will also be encouraged to incorporate the process into continuing education programming for pharmacists.

Pharmacists are often called upon to describe the value they bring to the health care system. A unified, consistent patient care process is critical to measuring pharmacists' value and advancing the profession as a whole in the evolving health system.

You can play an important role in the adoption of this process. Start by reviewing the process and then compare it to your current practice processes. Raise awareness with other pharmacists at your practice and discuss how the department as a whole can adopt a consistent process of care. Consider how pharmacy technicians can contribute in areas such as data collection to improve the efficiency of the process. Share the process with other practitioners on your health care team. Practice using the process and reflect on how effectively its use facilitated patient care.

Share your experiences with pharmacists and colleagues in your practice and at professional meetings. Incorporate the process into teaching materials for students you precept. Make sure that students have the opportunity to practice using the process in their patient care encounters. Students will begin to ask about the process so read and be prepared to answer questions. Finally, watch for additional resources to assist you in the implementation and assessment of the *Pharmacists' Patient Care Process*.

Pharmacists are often called upon to describe the value they bring to the health care system. A unified, consistent patient care process is critical to measuring pharmacists' value and advancing the profession as a whole in the evolving health system.

Pharmacists' Patient Care Process

Using principles of evidence-based practice, pharmacists:

Collect

The pharmacist assures the collection of necessary subjective and objective information about the patient in order to understand the relevant medical/medication history and clinical status of the patient. Information may be gathered and verified from multiple sources, including existing patient records, the patient, and other health care professionals. This process includes collecting:

- A current medication list and medication use history for prescription and nonprescription medications, herbal products, and other dietary supplements.
- Relevant health data that may include medical history, health and wellness information, biometric test results, and physical assessment findings.
- Patient lifestyle habits, preferences and beliefs, health and functional goals, and socioeconomic factors that affect access to medications and other aspects of care.

Assess

The pharmacist assesses the information collected and analyzes the clinical effects of the patient's therapy in the context of the patient's overall health goals in order to identify and prioritize problems and achieve optimal care. This process includes assessing:

- Each medication for appropriateness, effectiveness, safety, and patient adherence.
- Health and functional status, risk factors, health data, cultural factors, health literacy, and access to medications or other aspects of care.
- Immunization status and the need for preventive care and other health care services, where appropriate.

Plan

The pharmacist develops an individualized patient-centered care plan in collaboration with other health care professionals and the patient or caregiver that is evidence-based and cost effective. This process includes establishing a care plan that:

- Addresses medication-related problems and optimizes medication therapy.
- Sets goals of therapy for achieving clinical outcomes in the context of the patient's overall health care goals and access to care.
- Engages the patient through education, empowerment, and self-management.
- Supports care continuity, including follow-up and transitions of care as appropriate.

Implement

The pharmacist implements the care plan in collaboration with other health care professionals and the patient or caregiver. During the process of implementing the care plan, the pharmacist:

- Addresses medication- and health-related problems and engages in preventive care strategies, including vaccine administration.
- Initiates, modifies, discontinues, or administers medication therapy as authorized.
- Provides education and self-management training to the patient or caregiver.
- Contributes to coordination of care, including the referral or transition of the patient to another health care professional.
- Schedules follow-up care as needed to achieve goals of therapy.

Follow-up: Monitor and Evaluate

The pharmacist monitors and evaluates the effectiveness of the care plan and modifies the plan in collaboration with other health care professionals and the patient or caregiver as needed. This process includes the continuous monitoring and evaluation of:

- Medication appropriateness, effectiveness, and safety and patient adherence through available health data, biometric test results, and patient feedback.
- Clinical endpoints that contribute to the patient's overall health.
- Outcomes of care including progress toward or the achievement of goals of therapy.

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[1] The Joint Commission of Pharmacy Practitioners (JCPP) includes the following organizations: Academy of Managed Care Pharmacy, Accreditation Council for Pharmacy Education, American Association of Colleges of Pharmacy, American College of Apothecaries, American College of Clinical Pharmacy, American Pharmacists Association, American Society of Consultant Pharmacists, American Society of Health-System Pharmacists, National Association of Boards of Pharmacy, National Alliance of State Pharmacy Associations, and the National Community Pharmacists Association.

MARYLAND PHARMACISTS ASSOCIATION & MPHA FOUNDATION

Student Scholarships

Maryland Pharmacists Association (MPhA) Student Members are invited to submit an application for a scholarship sponsored by MPhA and MPhA Foundation. MPhA's mission is to promote excellence in pharmacy practice, strengthen the profession of pharmacy, and advocate for all Maryland Pharmacists, while the MPhA Foundation invests in the future of pharmacy by supporting student pharmacists, recognizing practice innovation and advancements, and enhancing philanthropy that supports leadership. Together, we support students' educational efforts as they prepare to take their place in the profession.

To apply, please carefully review the requirements as detailed below and submit your application with the required documents by **Friday, May 1, 2015**. All applications will be evaluated by the Scholarship Committee. Recipients will be notified by the end of May and are encouraged to come and be officially recognized during MPhA's 133rd Annual Convention Awards Luncheon that will be held in Ocean City, MD on Sunday, June 14.

DEADLINE: FRIDAY, MAY 1, 2015 • SCHOLARSHIP DESCRIPTION

Three scholarships in the amount of $1,500 each are awarded; two are sponsored by MPhA and one by MPhA Foundation for students pursuing careers in the field of Pharmacy.

Eligibility Requirements

Students must meet the following criteria:

- Be a Maryland resident and have a current Maryland driver's license or state of Maryland tax return.
- Be in good academic and disciplinary standing in a School of Pharmacy within the state of Maryland.
- Be a member of the student chapter of ASP-APhA and MPhA.

Selection

Applications are evaluated by the Scholarship Committee on the following criteria:

- Academic Achievement (minimum cumulative 2.5 GPA)
- Personal Achievement
- Letters of Recommendation (two maximum)
- Student Essay on Professional Goals (750 word maximum)

Check List of Required Documentation

Please ensure all are included for complete application:

- Completed Scholarship Application
- Proof of Maryland Residency: submit a copy of a valid Maryland driver's license or State of Maryland Tax Return
- Official Transcript
- CV or Resume
- Letters of Recommendation (two maximum)
- Student Essay on Professional Goals (750 word maximum)

To complete the scholarship application, visit www.marylandpharmacist.org. Application and required documentation may be mailed to: Maryland Pharmacists Association, C/O Scholarship Chairman, 1800 Washington Blvd., Suite 333, Baltimore, MD 21230 or emailed to admin@mdpha.com.

MPhA Members Receive FREE Financial Education from Edelman Financial

Edelman Financial Services is honored to partner with the Maryland Pharmacists Association (MPhA) to provide you with the financial education and individual advice you deserve.

As one of the largest independent financial planning firms in the nation[1], we are often asked; "Am I on track for a secure and comfortable retirement?" and "How much money will I need to have saved by the time I retire?" If you aren't sure, you're not alone!

The 2014 Retirement Confidence Survey, conducted by the Employee Benefit Research Institute, found that more than half of workers have never tried to estimate their retirement savings needs.[2]

We know that life is busy, but we also know that your retirement years are likely to be expensive ones. It is critical that you save for them — and save to the maximum and then some.

What's the best way to do that? Without a doubt, the No. 1 vehicle you have at your disposal is your retirement plan at work. That's your 401(k) — or many of you may have a 403(b) or another plan. You'll also need additional savings — in IRAs and/or other investments. But the tax-deferral advantage of your workplace retirement plan makes it your first and foremost means of saving adequately for retirement.

Are you taking full advantage of your retirement plan? Do you know what you need to do to contribute the maximum amount?

Here's what we've seen:

- Many Americans are not saving at all for retirement.
- Those who are saving admit that, while their 401(k) or 403(b) is the most important benefit they have at work, they aren't spending much time trying to optimize it.
- These Americans find the decision-making part of financial planning complicated and confusing. They don't know how to do it and they don't feel good about it.

We know retirement planning is a difficult topic for a lot of people. And yet, according to the same Retirement Confidence Survey, only 1 in 5 workers report they have obtained investment advice from a professional financial advisor. Of those 1 in 5, less than a third — only 27% of them — actually followed all of that advice.

We're Here to Help

At Edelman Financial, we've helped thousands of people just like you and are committed to helping you obtain financial security. That's why we are offering you a Free Financial Plan, a benefit for being a member of MPhA. This means you have the opportunity to meet with an experienced Edelman advisor to discuss all aspects of your personal finances, including investments, savings, estate planning, insurance, taxes, credit, debt, home ownership and mortgages. Depending on your needs, your advisor can even review long term care options and college tuition planning.

At your initial meeting, your financial advisor will take the time to get to know you, and learn about your goals and dreams for the future, in order to help you achieve them. The outcome is a clear plan of action, created by you and your advisor, specific to your unique situation and complete with recommendations for next steps toward achieving your financial goals.

Whether you're mid-career or getting ready to retire, you deserve the financial education and advice you need. Typically, the price of the financial plan is $800, but you get it FREE, with no obligation, thanks to your membership with MPhA. Visit **www.edelmanfinancial.com/MPhA** to get started today!

About Edelman Financial Services

In 1987, Ric and Jean Edelman founded Edelman Financial Services because they needed sound financial advice — but couldn't get it. Instead, they were given some very bad advice that proved costly. They were in their 20s — young and broke — and didn't have the million or the half-million dollars that financial advisors said they needed in order to be accepted as clients. So they decided to teach themselves — and vowed that, once they learned, they would make sharing their knowledge with others a cornerstone of their business going forward.

Today, Edelman Financial provides financial planning and investment management services to more than 26,000 individuals and families and manages $14.4 billion[3] in assets both online and via 41 offices across the country. The firm also provides 401(k) plans and institutional investment management for businesses. EFS has won more than 100 financial, business, community and philanthropic awards.[4]

1 Wealth Management.com's 2014 Top 100 RIAs are ranked by assets under management based on data from Meridian-IQ. For each firm, at least 10% of clients are high-net-worth, and at least 10% are not but get financial planning; institutional clients cannot comprise substantial part of business. Investor returns were not considered. Edelman Financial Services ranked 3rd.

2 Ruth Helman, Nevin Adams, Craig Copeland, and Jack VanDerhei, "The 2014 Retirement Confidence Survey: Confidence Rebounds—for Those With Retirement Plans," EBRI Issue Brief, no. 397, March 2014.

3 As of December 31, 2014

4 Throughout the firm's 27 year history, EFS and Ric Edelman have been presented with more than 100 business, advisory, communication and community service awards. A complete list of awards won can be requested by contacting the firm at (888)-PLAN-RIC.

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Finding Balance

Preventing Medication-Related Falls Through Appropriate Medication Use

Unintentional falls are the leading cause of fatal and nonfatal injuries in older adults.[1,2] According to the Centers for Disease Control and Prevention (CDC), older adults accounted for over 25% of all hospital emergency department visits related to unintentional falls.[1] It is estimated that 28%-40% of community-dwelling older adults over the age of 65 will sustain one or more falls in a year.[3] Falls in older adults are associated with serious health consequences, such as fractures, disability and loss of independence.[4] In one study, 24% of older adults that experienced a fall sustained a serious injury.[4]

Proactive strategies, such as multifactorial risk assessment partnered with a targeted intervention, have shown the most success in reducing falls among older adults.[5,6] This article will review age- and medication-related risk factors associated with falls in older adults. We will discuss evidence-based strategies that may be used in community and ambulatory care practice settings as well as the pharmacist's role in fall prevention. With increased knowledge and awareness, pharmacists can play an important role in preventing falls in older adults.

Learning Objectives: After reading this article, the learner will be able to:

- Describe the influence of age-related changes in drug metabolism on the risk of falling.
- Describe potential side effects of at least two classes of high risk medications associated with increased fall risk in older adults.
- Given a patient scenario, identify risk factors for falling in older adults.
- Given a patient scenario, use fall risk assessment tools to evaluate medication-related fall risk.
- Recommend at least two fall prevention strategies that community pharmacists may incorporate into their practice.

Key words: Falls, older adults, medication review, fall prevention

Age-Related Pharmacokinetic Changes and Fall Risk

Medication disposition in the body depends on four processes: absorption, distribution, metabolism, and elimination. As individuals age, pharmacokinetic changes in these processes may result in altered function and drug activity in the elderly. These normal age-related changes make older adults more susceptible to adverse drug effects that can increase risk of falls.[7]

Absorption

Drug absorption in older adults may be altered due to age-related changes in gastric pH and GI motility.[8] Older adults are also more susceptible to drug induced changes in absorption. For example, proton pump inhibitors and antacids increase gastric pH and may inhibit the absorption of other medications. Disease processes, such as Celiac or Crohn's disease, may alter drug absorption. However, in the absence of disease, pharmacokinetic, and drug induced changes in absorption do not appear to be clinically significant.[8,9] Although age-related changes may affect drug absorption, there is no evidence that these changes result in increased fall risk.[7]

Distribution

Age-related changes in distribution occur as a result of a decrease in total body water and lean muscle mass.[7] A decrease in total body water results in increased concentrations of water soluble medications, such as digoxin and lithium.[9] Higher concentrations of these narrow therapeutic range drugs can increase risk of falls related adverse effects, such as dizziness, blurred vision, and central nervous system (CNS) depression. Lipophilic medications, such as diazepam, also pose a fall risk that is related to a prolonged half-life in older adults. The prolonged half-life is potentially due to an increase in body fat that correlates to an increase in age.[7] Prolonged exposure to diazepam can increase risk of cognitive impairment and CNS depression and increase fall risk in older adults.

Age-related changes in distribution may increase drug concentration and duration of action. It is important to consider age-related changes in drug distribution when evaluating an older adult's medication regimen for fall risk. Special attention should be paid to drugs with a narrow therapeutic range that also have concerning side effects.

Liver Metabolism

As individuals age, there is a decrease in liver size and blood flow, which is a significant determinant of drug clearance.[7] As a result, medications that undergo extensive first-pass metabolism or require activation in the liver may be altered in older adults.[10] For example, propranolol undergoes extensive first-pass metabolism and has an increased bioavailability in older adults. This may result in increased antihypertensive and adverse effects, such as symptomatic hypotension, which can increase risk of falls in older adults.

Another important aspect of drug clearance in the liver is Phase I metabolism via the cytochrome P450 enzymes.[10] There is no evidence of age-related changes in Phase I metabolism, but these enzymes are susceptible to inhibition or induction by drug therapy.[11] These drug induced alterations in liver metabolism increase the risk of cytochrome p450 (CYP)-mediated drug-drug interactions (DDIs) and falls in older adults taking multiple medications.[12] In one study, the prevalence of potential CYP-mediated DDIs was 50% in older adults taking 5-9 medications, and as high as 92%-100% in patients taking 15 or more medications.[12] This study suggests that polypharmacy is an important risk factor for potential CYP-mediated DDIs, adverse effects, and falls in older adults.

Age-related changes in liver size and blood flow may increase the risk of adverse effects and falls in older adults taking drugs that undergo extensive first-pass metabolism. There are no clinically significant age-related changes in Phase I metabolism. However, older adults taking multiple medications are at risk for CYP-mediated DDIs and adverse effects which can increase the risk of falls.

Renal Excretion

Renal blood flow, tubular function, and glomerular filtration rates all decline with increasing age.[7,9] There are many examples of renally eliminated medications that can accumulate and predispose older adults to adverse effects associated with falls.[13] For example, morphine has an active metabolite that is renally eliminated. The active metabolite can accumulate and exacerbate CNS side effects of sedation, dizziness, and confusion. Another under-recognized class of agents impacted by decline in renal function is diuretics. In older adults, clearance of loop and thiazide diuretics is reduced. This results in higher plasma concentrations and an increased risk of toxicity, which may lead to falls.[9] There are several other commonly used classes of medications that may be impacted by reduce renal function. Accumulation of these renally eliminated drugs and active metabolites can increase the risk of adverse effects and falls in older adults. Pharmacists should be aware of these medications and practice more conservative dosing and monitoring in older adults.

Age-related changes in pharmacokinetics may have a significant impact on drug disposition, risk of adverse effects, and falls in older adults. Age-related changes in absorption have not been shown to be clinically significant. However, age related changes in distribution, metabolism, and elimination have a significant impact on risk of medication related adverse events and falls in older adults.

High Fall Risk Medications

There is a strong association between the use of certain classes of medications and the incidence of falls and fall-related injury in older adults.[14] Use of psychotropic medications and the risk of falls has been well studied. In general, any medication with psychotropic effects or "drugs that cross the blood-

brain barrier and act directly on the central nervous system" may cause falls.[15] Psychotropic medications encompass several classes of medications commonly used in older adults including: antidepressants, anticonvulsants, antipsychotics, benzodiazepines, sedative/hypnotics, and opioid analgesics.[14] In one community-based study, use of any psychotropic agent by older adults increased the risk of falls by 47%.[15]

Antipsychotic medications have been associated with a high fall risk, independent of patient settings.[15] Both first- and second-generation antipsychotics may cause extrapyramidal side effects, sedation, and orthostatic hypotension. Long term use of antipsychotics (> 90 days) has been shown to increase fall risk by 81% when compared to short term use. Additionally, patients newly started on antipsychotics are at an increased risk of falls.[16]

Sedative/hypnotics can cause cognitive impairment, sedation, and confusion. Benzodiazepines are associated with an increased fall risk after initiating treatment and with long term use. These effects are seen with both short- and long-acting agents. Non-benzodiazepine sedative/hypnotics, such as zolpidem, have a similar side effect profile and risk of falls as traditional benzodiazepines.[14]

Antidepressants can cause ataxia, postural hypotension, and syncope in older adults. There is little difference in fall and fracture risk between tricyclic antidepressants and selective serotonin reuptake inhibitors.[15] Studies have also shown that the risk of falls is dose-dependent and does not decrease with long-term use.[14] Therefore, older adults should be monitored for falls when newly started on antidepressants, with dosage adjustments, and long-term use.

Opioid analgesics, such as morphine, hydromorphone, fentanyl, and oxycodone can cause dizziness, syncope, and CNS depression. Studies have demonstrated mixed results, but several have shown increased fall risk.[17] Risk is also increased in patients with multiple risk factors or concomitant use with other high risk medications.[14,17]

Other classes of agents that have been studied and shown to increase fall risk in older adults are anticonvulsants, cardiac medications, and non-steroidal anti-inflammatory drugs (NSAIDs).[14,15,17] In particular, special attention should be given to older adults taking cardiac medication, such as anti-hypertensives, anti-arrhythmics, and diuretics. These agents are commonly used in older adults and have been associated with recurrent and injurious falls.[13,14,17]

Psychoactive medications are associated with the highest risk of falls in older adults. Other classes of medications, such as cardiac medications and NSAIDs, are associated with increased risk. All of these agents should be used with caution, particularly when used in older adults on multiple high risk medications.

Screening and Assessment of Fall Risk in Older adults

Falls in community-dwelling older adults is a common geriatric syndrome.[4] In one community based study, the absolute risk of falls in study participants ranged from 11% in older adults with no risk factors to 54% in patients with multiple risk factors.[18] This study, among others, suggests that older adults are at risk of falls and risk correlates to the number of risk factors.[18-20] One of the most effective strategies to promote fall prevention in older adults is universal screening.[20] Clinical practice guidelines recommend that all adults over the age of 65 be routinely screened to identify high risk patients that may benefit from intervention.[20] One simple, yet effective, screening tool that pharmacists can use in in any setting is to ask older adults "How many falls have you had in the past year?" Older adults who have experienced one or more falls in the past year should be considered "high risk" and have a multifactorial fall risk assessment performed.[19,20] The multifactorial risk assessment evaluates common risk factors associated with falls in older adults. Some of the most common risk factors include: [14,17,19,20]

- History of falls
- Orthostatic hypotension
- Gait and balance disturbances
- Decreased mobility/poor muscle strength
- Visual impairment
- Unsuitable footwear
- Use of psychotropic medications
- Polypharmacy
- Limited functional status
- Cognitive or other neurologic impairments

A number of evidence-based tools have been developed to assess fall risk, including several tools to help pharmacists identify medication-related risk factors for falls in older adults.[20-23] The updated American Geriatrics Society Beers Criteria is a clinical tool developed by a team of interprofessional geriatrics experts using evidence-based methodology to identify potentially inappropriate medications (PIMs) in older adults.[23] The tool organizes PIMs into 3 tables: (1) organ system/therapeutic category, (2) drug-disease/drug-syndrome interactions, and (3) drugs to be used with caution. Table 2 lists "history of falls or fractures" under Central Nervous System and identifies psychotropic and other medications that may increase fall risk. Additionally, other drug-disease/drug-syndromes listed under Central Nervous System should be assessed if present in an older adult's medications regimen as they may also contribute to increased risk of falls. This tool is available as a pocket card and may be used in any practice setting to assist with evaluating appropriateness of an older adult's medication regimen and their risk of falls.

Another tool used to assess medication-related fall risk is the "Tool 3I: Medication fall risk score and evaluation tool."[22] This fall risk

stratification tool was originally developed for hospitalized patients, but its use may be easily extrapolated into other patient care settings. The first part of the tool uses a simple 3-tier risk stratification method to calculate a "medication fall risk score." Medications are categorized as low, medium, or high risk with an assigned point value based on the medication's fall risk potential. Based on each medication's fall potential, a total score is generated. A score of 6 or higher is categorized as high risk falls. The second part of the tool recommends use of "medication fall risk evaluation tools" to further evaluate high risk patients (i.e., patients with a high medication fall risk score). One of the recommended fall risk evaluation tools is the Beers Criteria. Using medication fall risk scoring and evaluation tools provides a standardized method of assessing medication-related fall risk.

The Pharmacists' Role in Reducing Medication-Related Fall Risk

For high risk patients, a multifaceted treatment plan should be recommended. Clinical practice guidelines recommend that all older adults at high risk, particularly those with a history of recurrent falls, receive targeted interventions in the areas of strength and balance training, home safety, vision assessment, and medication management.[20] Community pharmacists are uniquely qualified and positioned to recommend targeted medication interventions and provide education to prevent medication-related falls in community-dwelling older adults.

There are several evidence-based interventions that pharmacists may use to reduce fall risk in older adults, including: [19,20,25,26]

- Medication regimen review
- Minimize the use of psychotropics and other high risk medications
- Interventions to prevent postural hypotension
- Vitamin D supplementation
- Education on fall prevention

Minimize Use of High Risk Medications

Conducting a patient specific medication review is the first step to minimize use of high risk medications. Several studies that included medication reviews as part of a multifactorial intervention showed a significant reduction in falls.[25,27] Likewise, studies aimed at reducing psychotropic use and polypharmacy demonstrated multiple health benefits including fewer falls, improved functional status, and less cognitive decline.[26,27] One of the most effective recommendations that a pharmacist can make is to reduce or eliminate the use of psychotropic and inappropriate medications. This may be done in multiple ways, including implementation of non-pharmacologic strategies or opting to use medications with fewer adverse effects. When psychotropic medications are indicated, they should be used appropriately and judiciously. This includes using the lowest effective dose, implementing a monitoring plan for adverse effects, and periodically re-evaluating appropriateness of the agent.[25] These are just a few examples of fall prevention strategies that pharmacists can implement, but in the article by Cooper et al., the authors provide a number of interventions by class of medications and other fall risk factors (See Table 1).[26]

Preventing Postural Hypotension

Assessment and management of postural hypotension should be included as part of the multifactorial intervention.[20] Postural hypotension is defined as a drop in systolic blood pressure of > 20mmHG or to < 90mmHG upon standing.[5] Patients presenting with postural hypotension may also present with symptoms, such as lightheadedness, dizziness, visual changes, or confusion. While the causes of postural hypotension vary, medications are an important risk factor to consider. Antihypertensives, antipsychotics, opioids, tricyclic antidepressants, benzodiazepines, and other sedative hypnotics increase the risk of postural hypotension in older adults. As part of the medication review, the use of agents that precipitate symptomatic changes in postural blood pressure should be decreased, substituted, or discontinued.[5,20] For example, an older adult's regimen that includes multiple antihypertensives should be adjusted to balance the benefits of lowering blood pressure while minimizing symptoms of dizziness and hypotension. Pharmacists may also provide behavioral recommendations to prevent postural hypotension as part of the multifactorial intervention.[5] Example recommendations include using hand rails, crossing legs when standing, slowly rising from a seated to standing position, and limiting prolonged standing.

Vitamin D Supplementation

Older adults are at increased risk of vitamin D deficiency which is associated with increased fall risk.[26] The U.S. Preventive Services Task Force (USPSTF) recommends that all older adults incorporate 400 to 600 units of vitamin D into their daily diet.[28] If this cannot be achieved through dietary intake alone, a multivitamin or vitamin D supplement is recommended. Additional pharmacologic supplementation may be required in patients with vitamin D deficiency (i.e. serum vitamin D level is less than 30 ng/mL).[26] Pharmacists can provide education to older adults regarding adequate vitamin D intake according to USPSTF recommendations. If patients require pharmacologic supplementation, pharmacists may recommend use of a vitamin D supplement and monitor patients to ensure appropriate dosing and adherence.

Use of pharmacologic vitamin D supplementation to decrease fall risk has received much attention over the past several years. There is conflicting data regarding the benefit of vitamin D supplementation and reducing fall risk in older adults in the literature.[26,27] In a recent Cochrane review evaluating multifactorial interventions, vitamin D supplementation was not consistently shown to reduce fall risk in most community-dwelling older adults.[27] However, in the subset of older adults

Table 1. Intervention Approaches for Medications Implicated in Falls

DRUGS	APPROACH
Multiple psychoactive medications	Carefully evaluate need and taper to discontinuance as possible by 10%–25% of dose per week. Goal is to minimize total psychoactive load by stepwise tapering for each drug suspected of contributing to falls without adverse drug withdrawal effects.
Benzodiazepines	Change to buspirone or selective serotonin reuptake inhibitor (SSRI) and taper benzodiazepine.
Antidepressants	Avoid older agents (e.g., tricyclics) and use lower doses of newer SSRIs.
Antipsychotics	Taper to discontinuance as above and use for shortest period 1–10 days, if no history of schizophrenia or schizoaffective disorders.
Narcotic/opioid analgesics	Use topical route (e.g., fentanyl) for opioids in terminal pain and consider topical nonsteroidal anti-inflammatory drugs (e.g., ketoprofen 5% gel for localized pain). Be sure that patient has acetaminophen up to 3 g/day and is not suffering if in terminal pain.
Antihistamines	Use relatively nonsedating agents if chronic need. Avoid older, more sedating, and anticholinergic agents (e.g., diphenhydramine).
Anticonvulsants	Titrate carefully to appropriate serum levels, if for seizures or pain management based on renal and hepatic function.
Antiparkinson agents	Ensure that medications (e.g., metoclopramide) are not the cause of extrapyramidal side effects; careful addition of any antiparkinson agent with neurologic evaluation documentation of benefit/risk.
Anemia (hemoglobin <12 g/L in either sex after cause[s] established)	Recommend iron sulfate 325 mg with ascorbic acid 500 mg daily to improve absorption and consider proton pump inhibitor if on low-dose aspirin therapy and low hemoglobin has developed. Check folate and B12 levels if macrocytic anemia present and supplement orally.
Inadequate calcium and vitamin D intake/levels	Check dairy product intake and ensure 1,000–1,500 mg elemental calcium daily, preferably as citrate, and 800–1,200 units daily if serum vitamin D is less than 30 ng/mL.

with clinically low vitamin D levels, supplemental vitamin D reduced their fall risk. Based on this evidence, it is prudent for pharmacists to follow the USPSTF recommendations regarding adequate intake of vitamin D and recommend pharmacologic supplementation to patients with laboratory confirmed vitamin D deficiency.

Education and Counseling

Clinical practice guidelines encourage all older adults to participate in fall prevention programs.[20] Education in the form of group programs and individualized counseling should be considered as part of an effective fall prevention strategy. Pharmacists or students may conduct seminars for older adults in their pharmacy or community about medications and risk of falls. Pharmacists may also incorporate verbal and written education into medication counseling. There are several freely available resources that pharmacists may use as part of their education campaign.

The American Geriatrics Society's Health in Aging Foundation, healthinaging.org, is a consumer website that provides information and educational resources geared towards the health of older adults. The "Medications and Older Adults" section of the website is dedicated to covering topics from age-related changes in medication disposition to reviewing the implications of updated Beers Criteria for older adults. One printable resource, "Ten medications older adults should avoid or use with caution," is an excellent guide that provides evidence-based information regarding high risk medications in lay language. The brochure provides talking points for pharmacists to review with older adults about prescription and over-the-counter (OTC) medications that may increase the risk of falls or other important safety concerns.

The CDC, cdc.gov, has developed the Stopping Elderly Accidents, Deaths & Injuries Toolkit.[21] The toolkit provides publications and resources for health care professionals dedicated to preventing falls in older adults. The website includes public health resources targeted at developing fall prevention programs in the community. The CDC has also developed a series of brochures and posters geared towards involving older adults in multifactorial interventions to reduce the risk of falls. The series promotes exercise, fall prevention at home, medicine safety, and vision health.

The National Institutes on Aging, nia.nih.gov, features an online series of brochures called "AgePage." This education series covers variety of topics on health and aging, including a publication on fall prevention.

Pharmacists and other healthcare professionals may download or order these resources in varying quantities from the website for distribution. Several of the resources are available in Spanish and most refer health care professionals and seniors to additional resources accessible online and via telephone. This is beneficial for older adults who may not be web savvy or have easy access to the internet. For a summary of these resources and additional information, visit the websites listed in Table 2.

Summary

The combination of age-related changes, co-morbid conditions, and inappropriate medication use increases the risk of falls in older adults. Pharmacists may contribute to fall prevention by collaborating with the healthcare team to ensure appropriate medication use. This may include conducting medication reviews for high risk older adults to identify PIMs that may contribute to increased fall risk. In addition, incorporating simple strategies, such as screening and appropriate counseling on high risk medications, may significantly reduce the risk of falls in vulnerable older adults.[20] Pharmacies that serve communities with a large geriatric population may develop fall prevention programs. Whatever the strategy, community pharmacists can contribute to the health of the older adults they serve by implementing fall prevention strategies and programs to increase awareness and to reduce the risk of falls in older adults.

Table 2. Online Fall Prevention Tools and Resources

American Geriatrics Society (AGS) Updated Beers Criteria for Inappropriate Medication Use in Older Adults (2012)
http://www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/2012

AGS Health in Aging Foundation
Ten medications older adults should avoid or use with caution
http://www.healthinaging.org/medications-older-adults/

Agency for Healthcare Research and Quality
Tool 3I: Medication Fall Risk Score and Evaluation Tools
http://www.ahrq.gov/professionals/systems/hospital/fallpxtoolkit/fallpxtk-tool3i.html

Centers for Disease Control and Prevention
Stopping Elderly Accidents, Deaths & Injuries Toolkit for health care providers
http://www.cdc.gov/homeandrecreationalsafety/Falls/steadi/index.html

National Institutes on Aging
AgePage
http://www.nia.nih.gov/health/publication

SIDEBAR | **Assessing Medication-Related Fall Risk**

CASE PRESENTATION

Mr. Samuel is a 76 year-old man with a past medical history significant for hypertension, osteoarthritis, benign prostatic hypertrophy (BPH), and diabetes. After having a fall earlier this year, he uses a cane to ambulate. Today, Mr. Samuel is being discharged to home after being hospitalized for dehydration. In addition to his chronic medications, new medications initiated upon discharge include amlodipine and zolpidem for blood pressure management and insomnia, respectively.

Prescription Medications		***Over-the-counter***
Aspirin	81 mg tablet daily	*Chlorpheniramine maleate* 4mg every 6 hours as needed for allergy symptoms
Amlodipine	10mg tablet daily	
Atenolol	100 mg tablet daily	
Insulin Glargine	50 units at bedtime	
Oxycodone/Acetaminophen	5/325mg tablet three times daily	
Terazosin	1 mg capsule at bedtime	
Zolpidem	10mg tablet at bedtime as needed for insomnia	

Use a fall risk assessment tool to evaluate Mr. Samuel's fall risk and recommend at least 1 strategy to decrease medication-related fall risk.

CASE RESOLUTION

Based on Mr. Samuel's history of a previous fall this year he is considered high risk of falls and should have a multifactorial fall risk assessment.[20] Based on the medication review and other notable risk factors, community pharmacists may recommend an individualized intervention to decrease risk of falls.[20,26] Using the 3I Tool, Mr. Samuel is at high risk for falls, with a medication risk score >6.[22] He is taking two high risk medications: oxycodone/acetaminophen (3 points) and zolpidem (3 points) and one medium risk medication, atenolol (2 points). According to the updated Beer's criteria, Mr. Samuel is on several PIMs that can increase his risk of falls.[23] Terazosin is a non-selective alpha-blocker that may cause orthostatic hypotension secondary to peripheral blockade of alpha receptors. Zolpidem is a non-benzodiazepine sedative that has similar effects as traditional benzodiazepines, including delirium and sedation. OTC agents are also an important consideration regarding fall risk. Chlorpheniramine is an OTC antihistamine with strong anticholinergic properties that can cause cognitive impairment, sedation, and orthostatic hypotension. Combining the results from the risk assessment tools provides pharmacists with a basis for making recommendations.

Based on Mr. Samuel's 3I Score >6 and use of several PIMs, community pharmacists can recommend alternatives to high risk medications and provide education. Recommendations to the provider or health care team may include: reassess and taper use of zolpidem after hospitalization,[20,26] switch terazosin to alternate agent to treat BPH symptoms with less risk of orthostasis,[23] and switch chlorpheniramine to a non-sedating antihistamine.[26] The pharmacist can review the "Ten Medications Older Adults Should Avoid or Use with Caution" brochure with Mr. Samuel. The pharmacist may also review how to read an OTC drug label with Mr. Samuel. This will improve Mr. Samuel's ability to select safe OTC medications that do not increase his risk for falls.

CONTINUING EDUCATION QUIZ

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This program is Knowledge Based – acquiring factual knowledge that is based on evidence as accepted in the literature by the health care professionals.

Directions for taking this issue's quiz:

This issue's quiz on *Finding Balance: Preventing Medication-Related Falls through Appropriate Medication Use* can be found online at www.PharmCon.com.

(1) Click on "Obtain Your Statement of CE Credits for the first time.

(2) Scroll down to Homestudy/OnDemand CE Credits and select the Quiz you want to take.

(3) Log in using your username (your email address) and Password MPHA123 (case sensitive). Please change your password after logging in to protect your privacy.

(4) Click the Test link to take the quiz.

Note: If this is not the first time you are signing in, just scroll down to Homestudy/OnDemand CE Credits and select the quiz you want to take.

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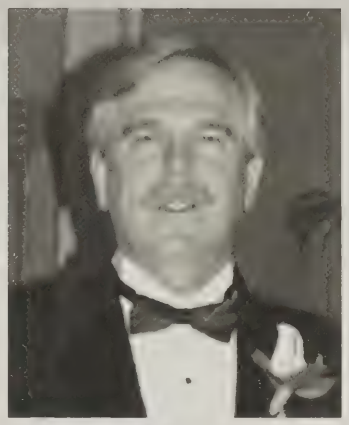
Member Mentions

Congratulations to MPhA's first Technician of the Year Award winner **Cathy Wilson**! She was recognized for her outstanding service and dedication to the pharmacy profession at the MPhA/MD-ASCP/MPhS 2015 Mid-Year Meeting on Sunday, February 15, 2015. Cathy has been a pharmacy technician for 30 years and has worked at Catonsville Pharmacy in Catonsville, MD since 1999.

In Memoriam



It is with great sadness we share that **Ernest David "Ernie" Testerman** of Darlington, MD passed away suddenly on March 5, 2015. He was 59. He graduated from Havre de Grace High school in 1973 and from University of Maryland at Baltimore School of Pharmacy in 1979, with honors. After graduation from pharmacy school, Ernie worked for Thrift Drug and Pharmacy. He then went to work for Elkton Pharmacy until its purchase by ACME/ SAVON, where he spent 17 years. Ernie not only enjoyed his career, but the individuals that were more than customers, they were extended family. He was President of MPhA in 1997.

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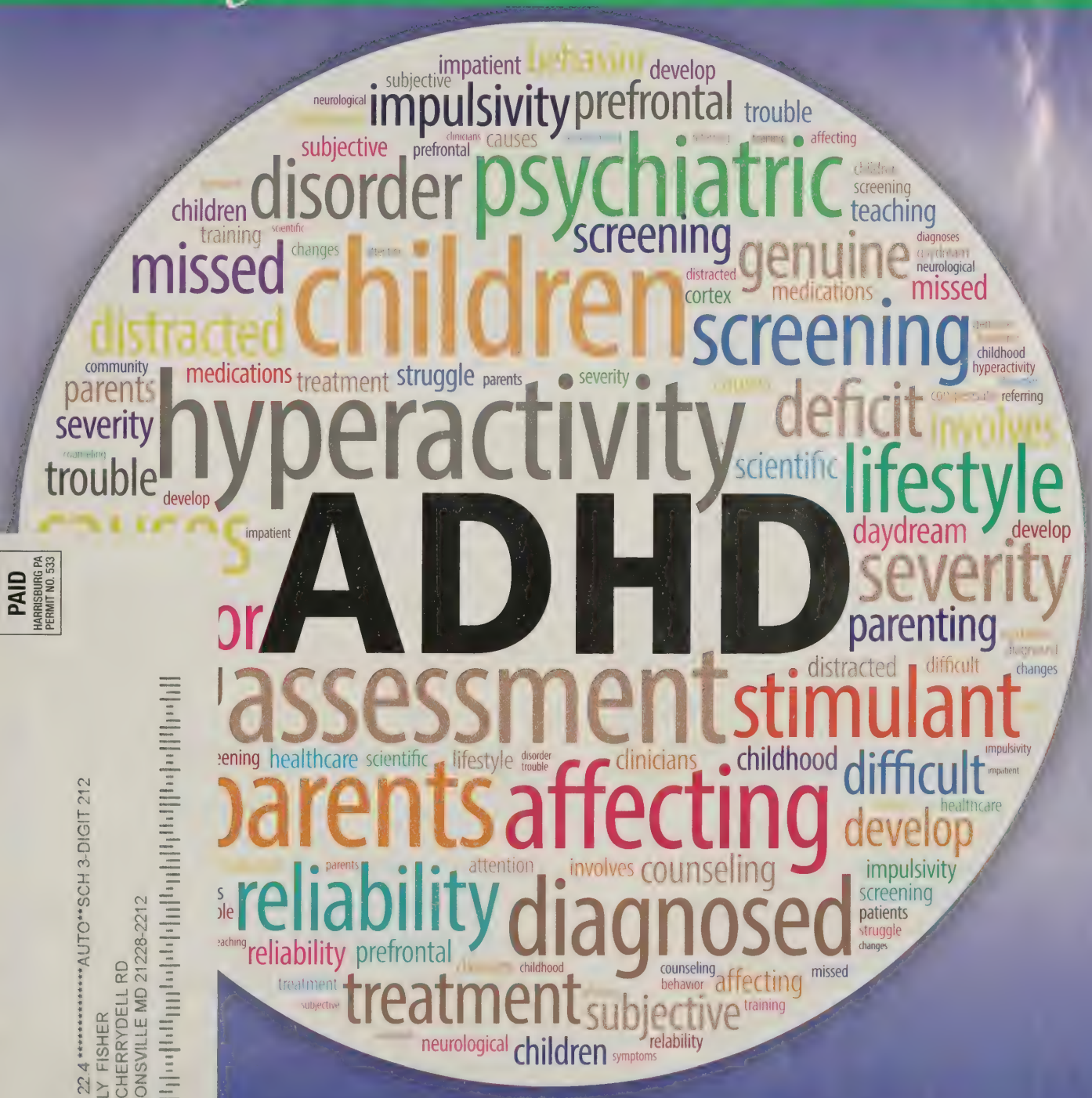

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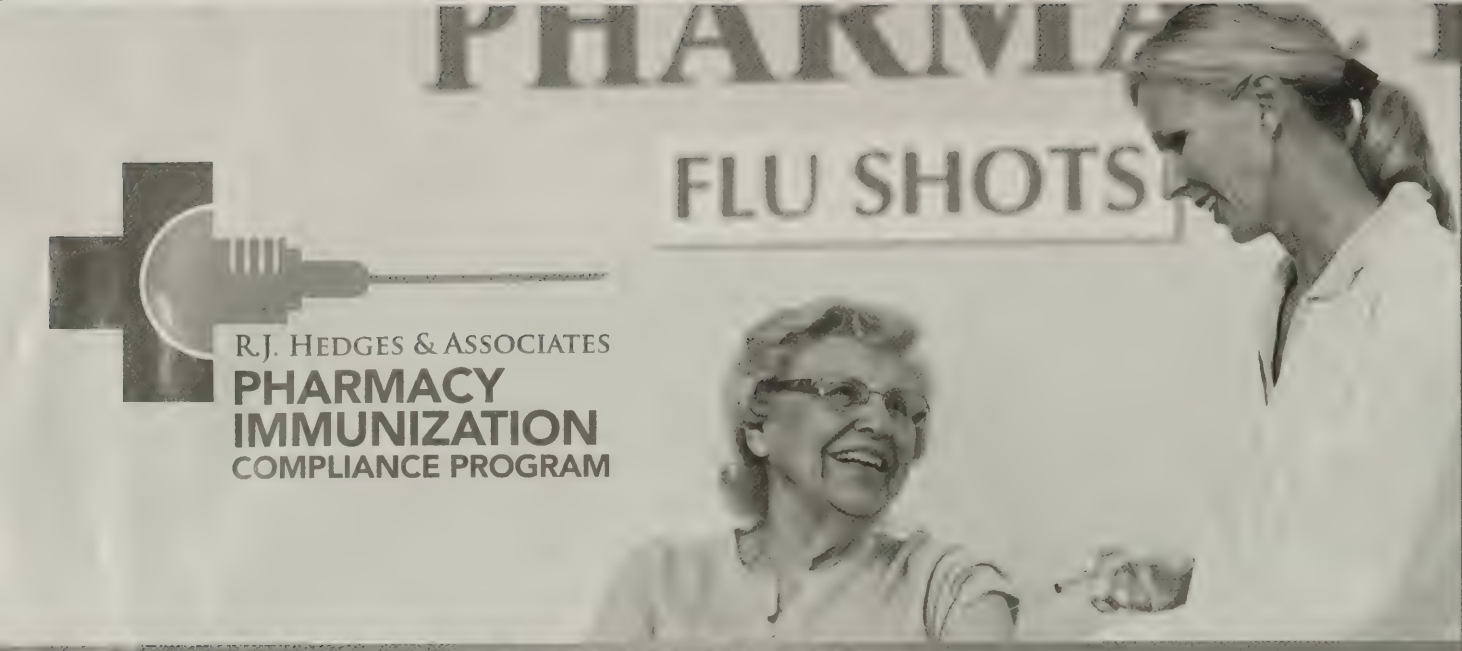

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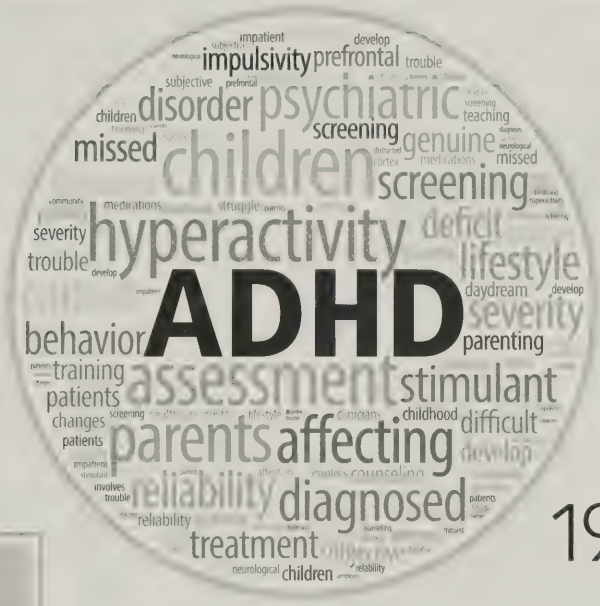

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Dear Fellow MPhA Members,

I need you. MPhA needs you. Our profession of pharmacy needs you. Please engage and invite fellow pharmacists, student pharmacists, and technicians to be involved.

Thank you for electing and entrusting me as MPhA President for 2015-2016. I am honored and humbled to continue serving you and MPhA as my home pharmacy association since I completed my first year of pharmacy school and attended my first Annual Convention in 2002. Having served in different roles alongside MPhA leaders and role models over the past 13 years, I believe that we can treasure the past, bridge to the present, and embrace the future. This is evident through ongoing contributions of dedicated MPhA past presidents, members, mentors, new practitioners, and student pharmacists. What a wealth of diverse experiences for our association as we represent pharmacists in Maryland and beyond.

It's an exciting time to be pharmacists with state and national momentum to pursue provider status for pharmacists. We are fortunate and thankful that Tom Menighan, APhA Chief Executive Officer, is leading national efforts as he is living in Maryland and also supporting us as Honorary President for this year. Please sign up for Provider Status updates from APhA. **Visit PharmacistsProvideCare.com** and click "Take Action" to contact your elected officials.

It's also a great opportunity for MPhA to have its new Executive Director Aliyah Horton, its new home at 9115 Guilford Road in Columbia, MD, and its new 2015 strategic plan. Please stay tuned for an invitation to the Open House of our new building and a Call for Volunteers to serve on committees and networks. It's an exciting journey for all of us to embark and serve together.

According to the Merriam-Webster dictionary, one definition of the word "ask" is *"to invite (someone) to go somewhere or do something,"* so you are being asked and invited. Let's be engaged and perhaps patriotic. It's coincidental for me to be installed as MPhA President during the Annual Convention on Sunday, June 14 – Flag Day. My late father always hung the U.S. Flag at our house on national holidays to remind us to be thankful as Vietnamese-Americans residing in this land of the free and opportunity; and my mother has always encouraged our family to give back. As I prepared my speech during my installment and in the spirit of Flag Day, I reflected on President Kennedy's quote: *"Ask not what your country can do for you. Ask what you can do for your country."* When engaging with prospective MPhA members, I have heard some ask "what's in it for me?" and I agree to an extent. Yet, I would like to balance, challenge, and dare to invite you: *"Ask not what MPhA can do for you. Ask what you can do for MPhA and our pharmacy profession."*

When patients ask you about a medication label, for example, "For children less than 2 years old, ask your doctor or pharmacist," what do you do? Do you help the parent or refer them to a physician? When patients walk into your pharmacy or pick up his/her prescription, do you take a minute to ask whether they have questions? When you walk into a pharmacy or buy your groceries, have you taken a minute to ask the pharmacist or technician if he/she is a MPhA member?

As we remind our patients to "Ask your pharmacist about your medications" let's also invite our pharmacy colleagues by reaching out and saying **"Ask Me 2 about MPhA"** which is the theme for my, or better yet, our 2015-2016 presidency. I will share an "Ask Me 2" button at the next MPhA event. It's fundamental to reach out across the state to engage, retain, and recruit members.

Let's engage by:

- Listening and seeking input from members and potential members to gain insights
- Reaching out to potential members in different practice settings and across the state through focus groups – it's time for greater regional outreach to engage and recruit members and partners
- Continuing to advocate for pharmacist's provider status and support expanded roles for patient care – it's time for further engagement and partnership within and beyond the MPhA

I greatly appreciate the opportunity to work with the dedicated leaders of the MPhA Board of Trustees, committees, members, and staff. We have great potential. Together, let's strengthen our foundation, further our collaboration, and support innovation for our Association and profession. We cannot move forward without you who are the face and voice of pharmacy. Together, let's carry out the mission of our MPhA: ***"Promote excellence in pharmacy practice, strengthen the profession of pharmacy, and advocate for all Maryland pharmacists."***

Sincerely,

Hoai-An Truong, PharmD, MPH
President

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For 178 years, McKesson has been delivering to independent pharmacies — making sure you have the right product, at the right time, at the right price.

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Legislative Updates

HB591/SB1
Health Occupations – Pharmacists – Refills of Prescriptions During State of Emergency
Signed into law 4/14/15
Allows pharmacists to refill a 30-day supply (instead of a 14-day supply) during a state of emergency.

HB748/SB14
Health Occupations – Board of Pharmacy – Pharmacist Rehabilitation Committee – Definition
Signed into law 4/14/15
Changes the requirements for the composition of the Pharmacist Rehabilitation Committee to "At Least 1 pharmacist."

HB181/SB69
State Board of Pharmacy – Sterile Compounding – Compliance by Nonresident Pharmacies and Repeal of Permit Requirement
Signed into law 4/14/15
Requires non-resident pharmacies to comply with USP797.

HB230/SB92
Health Insurance – Assignment of Benefits and Reimbursement of Nonpreferred Providers – Repeal of Termination Date
Signed into law 4/14/15

SB119
Health Maintenance Organizations – Premium Tax and Transfer of Premium Tax Exemption Value – Repeal
Unfavorable Report/Withdrawn

SB138
Maryland Medical Assistance Program – Assisted Living Services
Unfavorable Report/Withdrawn

SB143
Health Care Malpractice Claims – Notice of Intent
Unfavorable Report

Maryland Pharmacy Coalition (MPC) representatives and Del. Susan W. Krebs after testifying before the House Health and Government Operations Committee. *Photo Credit: Cynthia Boyle*

MPhA representatives were very active during the legislative session working in collaboration with the Maryland Pharmacy Coalition (MPC) and Delegates Joseline Pena-Melnyk and Susan W. Krebs to successfully advance HB 657, Pharmacists – Scope of Practice –Administration of Drugs and HB 716 Health Occupations – Prescriber–Pharmacist Agreements and Therapy Management Contracts. MPC members include: Maryland Pharmacists Association, Maryland Branch of the American Society of Consultant Pharmacists, Maryland Pharmaceutical Society, Maryland Society of Health System Pharmacists, University of Maryland School of Pharmacy Student Government Association, University of Maryland Eastern Shore School of Pharmacy Student Government Association, Notre Dame of Maryland University School of Pharmacy Student Government Association, University of Maryland Baltimore School of Pharmacy, University of Maryland Eastern Shore School of Pharmacy and Notre Dame of Maryland University School of Pharmacy.

SB195
Mental Health – Voluntary and Involuntary Admissions – Assent and Certification by Psychiatric Nurse Practitioners
Signed into law 5/12/15
Expands assent and certification to include 1 physician and 1 psychiatric nurse practitioner.

HB580/SB198
Health Care Disparities, Cultural and Linguistic Competency, and Health Literacy – Recommended Courses
Signed into law 5/12/15
Requires DHMH to post recommended courses. Amendment removed requirement for courses.

HB658/SB344
Public Health – Emergency and Allergy Treatment Program
Signed into law 5/12/15
Established caregivers and school nurses/camp nurses can administer epinephrine in an emergency.

HB657/SB346
Pharmacists – Scope of Practice – Administration of Drugs
Signed into law 5/12/15
Pharmacists may administer medications to patients that are considered "self-administered."

HB716/SB347
Health Occupations – Prescriber–Pharmacist Agreements and Therapy Management Contracts
Signed into law 5/12/15
May accept contracts with podiatrists and nurse practitioners. May also initiate therapy. Reduces contract reporting requirement.

SB399
Health Care Malpractice Claims – Use of Clinical Practice Guidelines
Unfavorable Report/Withdrawn

HB745/SB516
Public Health – Overdose Response Program
Signed into law 5/12/15
Advanced practice nurses and licensed physicians may administer naloxone without prescription. Training program may be taught by pharmacist.

HB733/SB537
Pharmacists – Substitution and Dispensing – Interchangeable Biological Products
Remained in committee

SB597
Public Health – Immunizations – Related Institutions
Remained in committee

SB598
Public Health – Vaccination Reporting Requirements – ImmuNet
Unfavorable Report

HB1143/SB796
Public Health – Maryland AIDS Drug Assistance Program – Expansion of Eligibility and Services – Pharmaceutical Rebate Coverage
Signed into law 5/12/15
Expands rebate coverage to include all services eligible under the federal Ryan White program.

HB1157/SB803
Health Insurance – Nonpreferred Providers – Assignment of Benefits, Reimbursement, and Fraudulent Insurance Acts
Remained in committee

HB1140/SB871
Health Insurance – Specialty Drugs – Participating Pharmacies
Unfavorable Report/Withdrawn

HB3
Prescription Drug Monitoring Program – Prescribers and Dispensers – Required Query
Unfavorable Report

HB58
Health Occupations – Members of Boards and Advisory Committees – Prohibition Against Concurrent Service
Signed into law 5/12/15
Prohibits an individual from serving concurrently as a member of a health occupations board or a specified advisory committee and as an elected officer of a specified professional association that advocates for the interests of the individuals regulated by that health occupations board.

HB945/SB626
Registered Nurses – Local Health Departments – Requirements for Personally Preparing and Dispensing Drugs and Devices
Signed into law 4/14/15
Allows nurses employed by local health department to dispense formulary medications including naloxone.

HB1290
Medicaid Managed Care Organizations – Pharmacy Networks – Plan
Signed into law 5/12/15
Requires DHMH to develop a plan to address access to pharmacy services. (Amendments removed specifications for access and managed care requirements for participating pharmacies in the network.)

HB1291
Medicaid Managed Care Organizations – Enrollees Access to Pharmacy Services (Any Willing Pharmacy)
Unfavorable Report

Medication Access
In early March, MPhA received notice that a major Medicaid Managed Care Organization would be restricting its pharmacy network within 30-days. The notification of the shift was done with limited information and assistance for patients and pharmacists. The change removed the vast majority of community pharmacies from the network and created transportation, medication access and adherence issues, and disrupted many long-term pharmacist-patient relationships. MPhA took a strong advocacy stance to protect reasonable patient-access to medication and to the critical member of the healthcare team, their pharmacist.

MPhA worked to raise awareness of the impact the decision would have on the health of the most vulnerable Marylanders. MPhA held a town hall meeting with approximately 50 community pharmacy stakeholders to strategize and learn about the decision's impact. In addition, MPhA collected hundreds of patient impact stories and shared them with the Department of Health and Mental Hygiene (DHMH), House Health Government Operations Committee and Senate Environment, Health and Education Committee. In collaboration with other stakeholders, MPhA rallied delegates to introduce HB1290 Medicaid Managed Care Organization – Pharmacy Networks – Plan that would change the access guidelines should future providers seek to modify their networks and HB1291 Medicaid Managed Care Organizations – Enrollees Access to Pharmacy Services that would have changed Maryland's networks to "any willing provider." Working through the last day of legislative session, HB1290 prevailed with modified language that directs DHMH to create new processes for how pharmacy network changes are reviewed and implemented.

MPC representatives at the bill signing of HB657 on May 12, 2015.

HOW CAN **PHARMACOMETRICS** IMPROVE MY CLINICAL PRACTICE?

The Masters of Science in Pharmacometrics program at the University of Maryland School of Pharmacy allows pharmacy professionals to acquire skills and knowledge to plan, perform, and interpret pharmacometric analyses with the goal of individualizing therapeutic decisions.

- 100% ONLINE
- GEARED TOWARDS CLINICAL PHARMACISTS
- A TOTAL OF FIVE SEMESTERS

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- Professionals with bachelor's, master's or doctoral degrees
- Professionals with full- or part-time jobs in areas such as pharmacy, pharmacology, engineering, statistics, pharmaceutical sciences, and epidemiology.

WHAT'S IN IT FOR ME?

Graduates of the MS in Pharmacometrics program will be highly sought after by hospitals, pharmaceutical companies, regulatory agencies, and other research organizations. Given the tremendous growth potential of the field of pharmacometrics, graduates of this program will also see accelerated professional growth. The program equips scientists and clinicians to interact with interdisciplinary teams more effectively and provides them with the tool kit needed to perform independent research.

The fall semester application deadline is May 1.

Visit ***www.pharmacy.umaryland.edu/pharmacometrics*** for more information and to attend a virtual open house.

UNIVERSITY *of* MARYLAND
SCHOOL OF PHARMACY

Make Faster, More Insightful Decisions Using Infotuition, Shelley Row®

Three Ways Feelings Improve Decision-Making

There it is again—that internal tug-of-war that signals a difficult choice. Perhaps you are put in the middle between adhering to a prescription for a controlled drug and complying with government regulations. Or, you muddle through your own stress while working with patients who are having a bad day. Guidelines may help but they can't cover all situations. You must rely on sound judgment. Judgment is best when it combines thinking and feeling.

Here are three ways to skillfully use feelings to improve decision-making.

1. Feelings are Quiet Wisdom. "We're making this harder than it has to be." This is over-thinking—the over-reliance on working memory in the prefrontal cortex (PFC) of the brain. While powerful, the PFC is slow, takes considerable energy; and holds limited information, like the RAM in a computer. A vexing situation has too many variables to process cognitively alone. But if you are attentive you notice the little nagging feeling that holds you back from deciding. Improve decision-making by noticing the nagging feeling and giving it a name. The nagging feeling hints at experiences stored in other parts of the brain as your quiet wisdom. Naming the feeling brings it into consciousness and allows you to probe for insight. Perhaps you are conflicted about filling a prescription for a new patient. You say to yourself, "What's bothering me?" You notice and name the feeling, *worried*. "I'm worried about prescription drug abuse. I saw this behavior before and it didn't turn out well. I should call the doctor first." The nagging feeling brings additional wisdom to the decision.

Shelley Row served as the opening speaker for the 133rd Annual Convention

2. Feelings are Flags. Has emotion ever hijacked your thinking? That's a knee-jerk reaction and it starts with strong feelings. The strong feeling is launched by the amygdala (the fight or flight response) in the brain when it senses a threat. The threat might be physical but it is more likely a situation that goes against your belief system. The difference between what you experience and what you believe is identified as a threat. The amygdala stimulates the fight/flight response and you react. Think about your triggers or hot button issues. Triggered feelings are flags that something may be amiss. A trigger registers first in the body such as tightening of the chest or knot in the stomach. Recognize triggered feelings as flags, observe the bodily signs, and take steps to calm yourself. That allows the thinking brain to re-engage. That's when sound decisions are made.

3. Feelings Bring Insight. Tough decisions benefit from an aha-moment when answers materialize from thin air. Flashes of insight happen when the brain (corpus callosum) merges information from across your experience and assembles it in a fresh way. A calm brain allows subtle feelings to emerge from the background. Help the aha-moment by giving your brain a time out – mow the grass, go for a walk, or take a nap. Be receptive to the subtle feelings. It's the combination of your experiences, thought and *feelings*, that provide the best decisions.

Feelings, skillfully used, inform over-thinking; slow knee-jerk reactions; and create aha-moments. Use all of your brain to find the decision that just *feels* right.

Save the Dates!

Visit www.marylandpharmacist.org for more information.

Board of Trustees Meeting
September 17
November 19

American Pharmacists Month CE Program
October 15

Leadership Development Workshop – Register online!

Sponsored by the MPhA Foundation

November 7 • 8:30 AM – 4:30 PM

9115 Guilford Road, Suite 200, Columbia, MD 21046

6 Continuing education credits

Registration: $75

Target audience: New practitioners, 4th year students, emerging leaders

Congratulations to the 2015 Graduating Class!

Notre Dame of Maryland University School of Pharmacy

Christine Aggabao
Abel Amare
Payam Askary
Dolapo Ayo-Vaughan
Jonathan Calogero
Kimberly Chen
Sophia Chien
Laura Cullum
Ivy Dang
Jay Darji
Pilar Davila
Ruth Doran
Jim Dulay
Ahmed Eid
Donna Elhindi
Joshua Greeno
Ashley Harris
Leah Helman
Kyle Hochreiter
Yoonyoung Huh
Tamara Idlibi
Kel C. Ihekire
Elizabeth Ikiki
Aris Karabelas
Dahae Kim
Sabrina Kim
Christina Kudrna
Jonathan Leligdowicz
Gilles Lewe
Alexandra Lowery
Amy Lownes
Chinyere Mbadugha
Benora McBride
Andre Melendez
Christina Miele
Dalvinder Nagra
Lynh Nguyen
Quyen Nguyen
Homa Nusraty
Esther Nwaigwe
Joy Nwangwu
Esther Okorie
Sylvia Okrzesik
Uwaoma Onyebuenyi
Shefali Patel
Vera Pattah
Craig Porter
Ciera Quash
Afsheen Qureshi
Emily Richards
Amanda Rumsey
Karel Sinoben
Xianghai Tan
Shannon Thompson
Megan Tomas
Tin Tran
Monique Turner
Ijeoma zohou
Stefan Varga
Laura Winn

University of Maryland Eastern Shore School of Pharmacy

Ademola Ajimatanrareje
Harriet Anyiwo
Babatunde Bolarinwa
Cheree Caesar
Kam Chan
Mark Church
Brittany Coleman
Thomas Crum
Bledar Demaku
Jade English
Brittany Galiano
Wahab Gbadamosi
Sasin I. George
Joyceline Ghogomu
Megan Glass
Ziad Haddad
Keia Hill
Nicole Hyman
Brandy Inkrote
Richard Jiang
Ross Jones
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Ilir Kojtari
DonJuan Leftridge
Glwadys Lekane
Rachael McWilliams
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Mercy Mudoh
Kareemah Muhammad
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Jarjeet Singh
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University of Maryland School of Pharmacy

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Jaime Lyn Acito
Mary Afrane
Abiola Oluwakemi Akinwale
Olajumoke Opeoluwa Amuwo
Rilwan Olawuyi Badamas
Simon Bae
Peter Fawzy Barakat
Molly Ramsey Bettridge
Evangelyn Michelle Brunson
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Xirui Chen
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Stephan Metro John Cremo
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Sue Jung Lee
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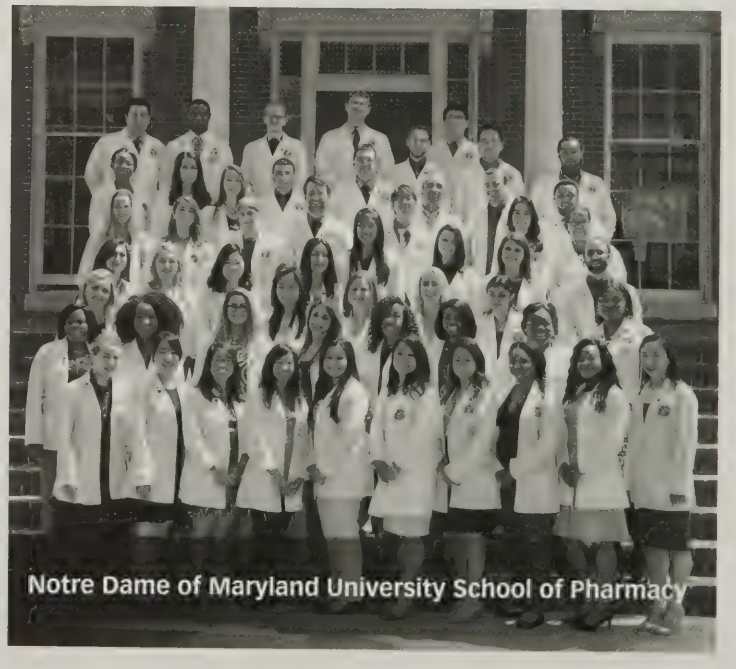

Notre Dame of Maryland University School of Pharmacy

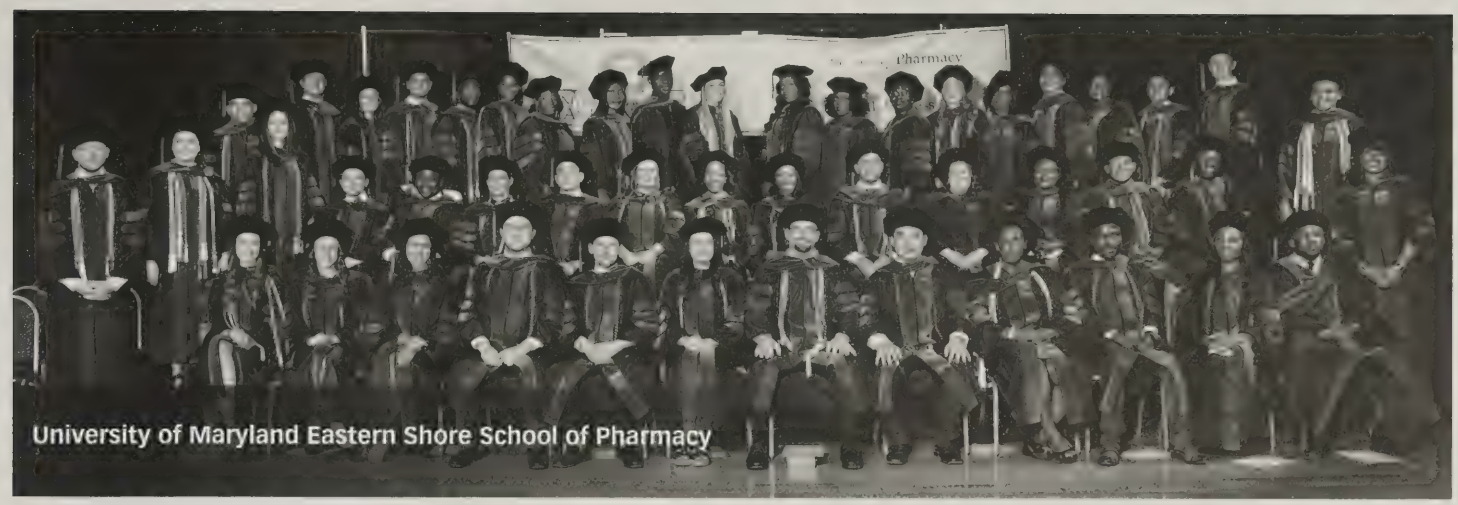

Photo credit: Andrew Nock

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Sargam Raja Mahat
Alexandra Leigh McPherson
Bethany Ann Miller
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Daniel Mina
Jessica Marie Montague
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Kun Yang
George Yeh
Stacy Milan Yoo
Htet Htet Wint Zaw

MPhA has Moved!

MPhA thanks the Building Committee for the tremendous amount of time and effort it took in securing and shaping our home. Pictures of the building are on our Facebook at www.facebook.com/MarylandPharmacistsAssociation.

Address: 9115 Guilford Road, Suite 200, Columbia, Maryland 21046

Telephone: 443-583-8000
Fax: 443-583-8006

Playing to Win!

133rd Annual Convention

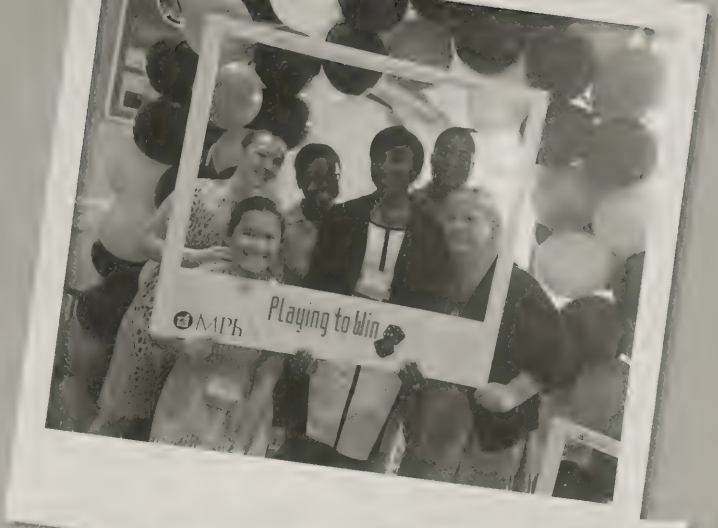
June 12–14, 2015 Ocean City, MD

This year, the 133rd Annual Convention brought in over 130 attendees! We hope everyone gained some new perspectives from our dynamic speakers and enjoyed their time with us in Ocean City. Highlights of the weekend included continuing education sessions on the most current trends in the pharmacy profession, roundtable discussions, networking, awards luncheon, crab feast, welcoming reception, tradeshow, and the Barry Poole Memorial Golf Tournament. In case you were not able to attend the Convention, here is a quick recap of our continuing education sessions:

- **Make Faster, More Insightful Decisions Using Infotuition®** – Shelley Row, our keynote speaker, explained why it is important to consider both thinking and feeling when making a complex decision. *See article on page 9.*
- **What's New and in Pain Management and Palliative Care Management?** – Lynn McPherson gave an update on new medications used to treat pain and non-pain symptoms approved by the U.S. Food and Drug Administration in 2014.
- **Addressing the Adherence Alphabet** – Sam Houmes described three scales which measure medication adherence and compared and contrasted two mathematical measures of adherence.
- **The Law, Survey, and Other Things** – The Board of Pharmacy Executive Director Laverne Naesea and Board member David jones reviewed the recent changes in Maryland State legislation relevant to pharmacy practice and discussed the initial findings from the Pharmacist and Technician Working Conditions Survey.
- **Pharmacy Report for the Surgeon General** – Rear Admiral Pam Schweitzer described the vital role pharmacists have in the field of public health, related to preventive care and chronic disease state management. She also identified opportunities for pharmacy to strengthen system infrastructure as part of healthcare transformation and payment reform.
- **"Know Pain, Know Gain" Pharmacy Patient Pain Counseling Competition** – Jenna Klempay moderated a pain competition and identified common medications and treatments used in pain management. She also illustrated main counseling points and strategies for patients with pain. Melissa McCarty from the University of Maryland School of Pharmacy won the competition and $500!
- **Medical Cannabis in Maryland** – Commissioners Chris Charles and Debby Miran described basic pharmacology and uses of cannabis. They also summarized Maryland's proposed medical cannabis regulations and the ongoing role of the Natalie M. LaPrade Medical Cannabis Commission.
- **Opioid Overdose Prevention** – Erin Haas explained the role of the pharmacist in overdose prevention and identified ways that pharmacists can participate in and support evidence-based efforts to reduce overdose deaths.
- **Don't Gamble on Safety** – The Alliance for Patient Medication Safety Executive Director Tara Modisett discussed the role of Patient Safety Organizations and identified ways to implement continuous quality improvement processes in your pharmacy practice.
- **Expanding Access through Pharmacy-Based Point-of-Care Testing (POCT)** – Don Klepser described opportunities for pharmacists to develop POCT services and described the POCT research being done in community pharmacies.
- **Don't Gamble on Disease: Reducing Your Patients' Risk with Vaccinations** – Cherokee Layson-Wolf and Sarah Jaffery summarized the 2015 updates to the Advisory Committee on Immunization Practices immunization schedule for children, adolescents, and adults.
- **Preparing Today's Pharmacy Professionals** – Mark Freebery, Mark Brueckl, and Nicole Culhane discussed preceptor programs from the three schools of pharmacy in Maryland and the role of practice professionals and experiential education in practice settings and mentoring.
- **MAC 2015** – Matt Shimoda and Executive Director of the Maryland Pharmacists Association Aliyah Horton discussed the status of implementation and enforcement of the 2014 MAC pricing law and reviewed the outcomes of the 2015 legislative session.

Thank you to all our speakers, exhibitors, and corporate sponsors for their continuous support!

To view all the pictures from the Convention, visit us on Facebook at www.facebook.com/MarylandPharmacists Association or search our Convention hashtag, #MPhA2015, on Facebook and Twitter. We hope to see everyone again next year. Stay tuned for information on the 134th Annual Convention.



Some Faces of the 133rd Annual Convention

Excellence in Pharmacy Awards Luncheon

Sunday, June 14, 2015

Congratulations!

Veronica Timmons and **Vorleak Vuth** are the recipients of the MPhA Scholarship Awards. **Francis Nguyen** is the recipient of the MPhA Foundation Scholarship Award. All three students are from the University of Maryland School of Pharmacy.

Thomas E. Menighan is selected as **MPhA's Honorary President**, an honorary position on MPhA's Board of Trustees which is given to an individual who has worked for MPhA or Maryland Pharmacy over a long period of time. Thomas is currently the executive vice president and chief executive officer of the American Pharmacists Association. He is a long-term MPhA member and resident of Maryland.

Thomas Cargiulo is recognized with the **Cardinal Health Rx Champions Award** (sponsored by Cardinal Health Foundation). Thomas is honored for demonstrating outstanding commitment to raising awareness of the dangers of prescription drug abuse among the public and pharmacy community. He is currently a Medical Science and Treatment Adviser at Reckitt Benckiser Pharmaceuticals, Inc. and volunteers his time as a speaker for Pharmacists Education and Advocacy Council's public education program "Stepping Out of the Shadows" which seeks to destigmatize addiction disorders.

Cherokee Layson-Wolf (R) is honored with **MPhA's Mentor Award** with Deanna Tran, MPhA member. She was recognized for her continuous efforts in engaging with pharmacists and student pharmacists to pursue excellence in education and pharmacy practice. Cherokee is an Associate Professor in the Department of Pharmacy Practice and Science and the Associate Dean for Student Affairs at the University of Maryland School of Pharmacy.

W. Christopher Charles is recognized with the **Distinguished Young Pharmacists Award** (sponsored by Pharmacists Mutual Companies). He has made a significant impact to the pharmacy profession since his graduation from the University of Maryland School of Pharmacy in 2011. Chris is currently the Transitions of Care Coordinator at Sinai Hospital of Baltimore pharmacy department and is the pharmacy representative on the Maryland Department of Health and Mental Hygiene's Natalie M. LaPrade Medical Cannabis Commission.

Amy Nathanson is honored with the **Excellence in Innovation Award** (sponsored by Upsher-Smith Laboratories) for demonstrating significant innovation in her practice, resulting in improved patient care and the advancement of the pharmacy profession. Amy is the Clinical Programs Manager for Specialty Services at the Johns Hopkins Outpatient Pharmacies. She leads a group of Clinical Coordinator Pharmacists and Specialty Technicians in a telephone based service that offers pharmaceutical care to patients being treated for hepatitis C, rheumatoid arthritis, human growth hormone, and fertility services.

Neil Leikach graciously accepted the **Seidman Distinguished Achievement Award** with his wife Dixie Leikach, MPhA Chairman. The award recognizes Neil for his major contributions to the Maryland Pharmacists Association, organized pharmacy, and the profession of pharmacy. He is an independent pharmacy owner of Catonsville Pharmacy in Catonsville, MD since 1999 and Finksburg Pharmacy in Finksburg, MD since 2001. He provides pharmaceutical care in point of care services, medication therapy management, vaccinations, diabetes education, hypertension screening, and compounding services.

Butch Henderson is awarded the **Bowl of Hygeia Award** with Sara Martin, Boehringer Ingelheim Representative, for his outstanding community service and devoting his time, talent, and resources to a wide variety of causes. The award is the most widely recognized international symbol for the pharmacy profession and is considered one of the profession's most prestigious awards. Butch regularly interacts with school leaders, elected leaders, and volunteers within his community. Butch has hosted numerous softball tournaments to raise money for causes such as Duchenne Muscular Dystrophy, Brain Cancer Research, Alphas Glory Crisis Pregnancy Center, and Faith Communities and Civic Agencies United. He is currently the Pharmacy Directory at Klein's ShopRite Pharmacy of Maryland where he has been employed since 1989. The award is sponsored by the American Pharmacists Association Foundation and National Alliance of State Pharmacy Associations. Boehringer Ingelheim in the premier supporter.

2015–2016 Board of Trustees

The 2015–2016 Board of Trustees was installed during the Excellence in Pharmacy Awards Luncheon. President Hoai-An Truong and the Board took their oath in front of all the attendees to serve MPhA. A few noteworthy changes to your Board have occurred …

- Dixie Leikach moved from president to chair
- Hoai-An Truong moved from president-elect to president
- Kristen Fink was voted president-elect
- W. Christopher Charles moved from vice speaker of the house to speaker
- Ashley Moody was voted vice speaker of the house
- Two trustee seats were voted upon:

  Wayne VanWie was re-elected and Chai Wang was elected. Both trustee seats end in 2018.
- G. Lawrence Hogue was elected to the trustee seat previously held by Ashley Moody which ends in 2017

MPhA thanks the Board for their service and continuous dedication to the pharmacy profession. *Please visit page 3 to view the full Board of Trustees.*

Member Mentions

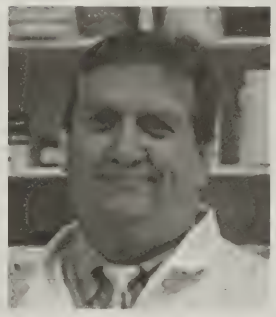
Rondall Allen

The University of Maryland Eastern Shore has appointed **Dr. Rondall E. Allen** as Dean of the School of Pharmacy and Health Professions starting July 1, 2015. Dr. Allen has been an associate professor and associate dean for academic quality at South University School of Pharmacy in Savannah, Georgia. Between 2003 and 2013, he taught and worked as an administrator in the College of Pharmacy at Xavier University in New Orleans, where he earned his doctor of pharmacy degree in 1993. His earned his undergraduate degree in pharmacy in 1989 from Florida A&M University, where he was also an assistant professor from 1996 to 1998. Dr. Allen will serve as an ex-officio member of the MPhA Board of Trustees.

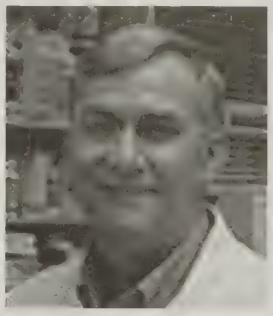
Natalie Eddington

The University of Maryland School of Pharmacy Professor and Dean **Natalie Eddington** was voted chair-elect of the American Association of Colleges of Pharmacy Council of Deans. Her appointment begins in July 2015 and she will become chair of the Council in July 2016. The mission of the Council is to identify and address major issues related to the conduct of professional, post-professional and graduate education, research and service in pharmacy and the pharmaceutical sciences.

John and Wayne VanWie, brothers and pharmacy owners of Professional Pharmacy in Baltimore, were inducted into the Dean's Hall of Fame for Distinguished Community Pharmacists. The Hall of Fame Award is presented annually by the University of Maryland School of Pharmacy in recognition of a pharmacist's leadership, entrepreneurship, and passion for independent pharmacy. John graduated from the University of Maryland School of Pharmacy in 1984 and Wayne graduated in 1988. Both had decade-long careers at Safeway before purchasing Professional Pharmacy in 2006.

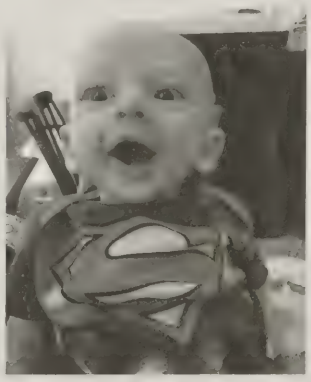


John VanWie

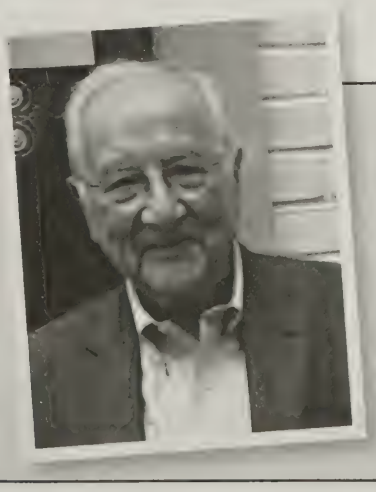


Wayne VanWie

Amy Nathanson and husband Marc Ershler welcomed their first baby boy, Max Nathanson Ershler, to the family on April 26, 2015 at 2:51 pm. He weighed in at 6 lbs. and 12 oz. and 19.75 in. Amy serves as the co-chair of the Professional Development Committee.

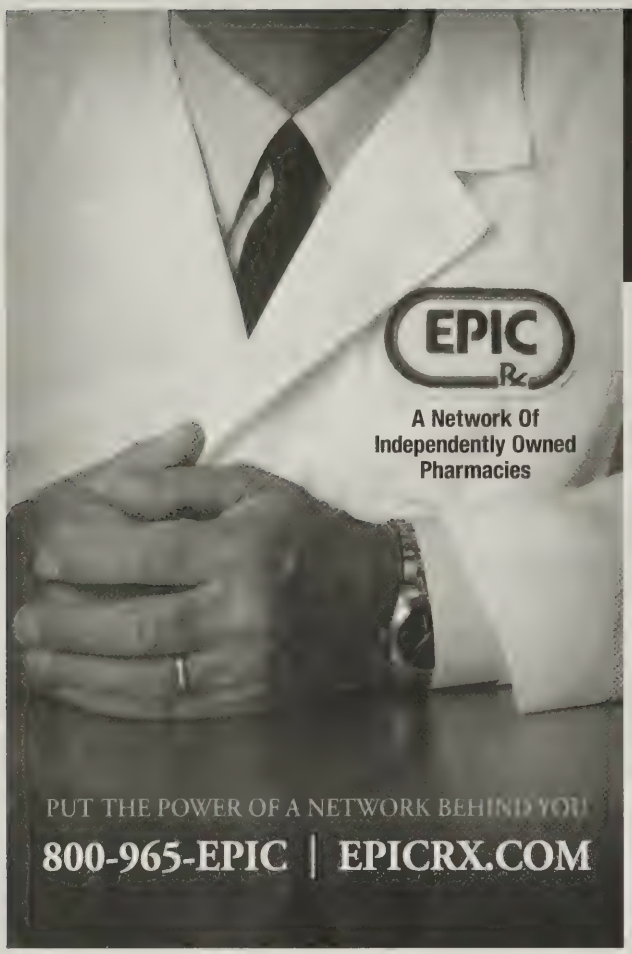


Max Ershler



IN MEMORIAM

It is with great sadness we share that **Mayer Handelman** passed away on June 30, 2015. Mayer was a significant contributor to the pharmacy profession and worked tirelessly to improve senior care. He was a long-term MPhA and MD-ASCP member. He started Woodhaven pharmacy over 50 years ago. Mayer also founded Woodhaven institutional services in the 1970's and built it into the largest independent LTC pharmacy in Maryland before being acquired by NeighborCare in 1994. He will be greatly missed.



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ADHD Medications

The Pharmacist's Role in Managing Side Effects

Vy Nguyen, PharmD Candidate 2016 | Allison Lardieri, PharmD | Jill Morgan, PharmD, BCPS
University of Maryland School of Pharmacy

Pharmacists serve as valuable resources in the education of patients and their caregivers on ADHD medications. With a solid understanding of the appropriate use, therapeutic efficacy, monitoring, and management of side effects of commonly used ADHD medications, pharmacists can be at the forefront for addressing patient questions and concerns regarding ADHD therapy.

Learning Objectives: After reading this article, the learner will be able to:

- Describe the role of each medication class in ADHD pharmacotherapy
- Identify general safety and efficacy monitoring parameters for patients taking ADHD medications
- Compare and contrast side effects among the various classes of the U.S. Food and Drug Administration (FDA)-approved ADHD medications
- Given a patient case, recommend an appropriate intervention to minimize side effects experienced by a child taking a medication for ADHD

Key words: ADHD, stimulants, nonstimulants, methylphenidate, dextroamphetamine, lixdexamfetamine, dexmethylphenidate, atomoxetine, guanfacine, clonidine

Introduction

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common psychiatric disorders diagnosed during childhood and often continues into adulthood. According to the National Survey of Children's Health of 2007, 7.2% of children aged 4–17 years old had a current ADHD diagnosis.[1] This psychiatric disorder is characterized by a combination of manifestations, including the inability to focus, hyperactivity, and impulsive behavior. ADHD is often accompanied by other co-morbidities, such as depression or oppositional defiant disorder. As a result, children with ADHD often struggle with performing well in school and maintaining interpersonal relationships.[2]

Effective options for ADHD treatment include medication therapy, behavioral therapy administered by a parent and/or teacher, or a combination of both. Most children with ADHD are treated with both medication and behavioral therapy.[3] According to the Multimodal Treatment Study of Children with Attention Deficit and Hyperactivity Disorder, medication use alone was found to be more effective than behavioral treatment alone in managing ADHD, and pharmacologic therapy combined with behavioral therapy was found to be even more effective than either option alone.[4] As of 2007, 4.8% of all children aged 4–17 years old (2.7 million) were taking medications as part of their ADHD therapy.[1]

Given the importance of pharmacologic therapy in the management of ADHD, pharmacists can play an important role by increasing patient knowledge of their medications, monitoring for therapeutic efficacy, and preventing and managing side effects.

FDA-approved ADHD Medications

Stimulants

Stimulants are first-line medications for ADHD.[3] This class of medications enhances the effects of the neurotransmitters dopamine and norepinephrine in the brain by either inhibiting its reuptake, increasing its release into the synaptic cleft, inhibiting the catabolic activity of monoamine oxidase, or a combination of the mechanisms.[5] Stimulants have been shown to be effective at improving ADHD core symptoms (hyperactivity, impulsivity, and inattentiveness) when used as both short and long term therapy.[6]

FDA-approved stimulants for ADHD treatment in children include[3]:

- Methylphenidate (Concerta, Methyl ER, Methylin, Daytrana, Ritalin, Ritalin LA, Ritalin SR, Metadate CD)
- Dextroamphetamine (Dexedrine/Dextrostat, Dexedrine Spansule)

- Lisdexamfetamine (Vyvanse)
- Dexmethylphenidate (Focalin, Focalin XR)
- Mixed amphetamine salts (Adderall, Adderall XR)

Non-stimulants

Non-stimulant medications are an option in ADHD patients who are not able to achieve their therapeutic goals while on a stimulant or who experience intolerable side effects associated with a stimulant. Non-stimulants can be used as either monotherapy or add-on therapy in addition to the stimulant medication. They have been shown to be effective in reducing the core ADHD symptoms, although to a lesser degree than with the stimulant medications.[7]

The non-stimulants currently FDA approved for ADHD treatment in children include[3]:

- Atomoxetine (Strattera)
- Guanfacine extended-release (Intuniv)
- Clonidine extended-release (Kapvay)

Atomoxetine is a selective noradrenergic reuptake inhibitor. It is thought that atomoxetine reduces ADHD symptoms through the inhibition of presynaptic norepinephrine transporters.[8]

Guanfacine ER is a specific $\alpha 2$ adrenergic agonist, while clonidine ER is a nonspecific $\alpha 2$ adrenergic agonist. It has been suggested that both drugs bind to postsynaptic $\alpha 2A$-adrenoreceptors in the prefrontal cortex. This increases network firing of the prefrontal cortex (PFC) neurons, which potentiates the PFC's ability to regulate attention, impulse control, and other functions which are dysregulated in ADHD.[9,10,11]

General Monitoring Parameters

The American Academy of Pediatrics (AAP) provides general monitoring parameters that patients with ADHD can use to measure the efficacy and side effects of ADHD medications. During the first month of initiation or during titration, teachers and parents should provide feedback or complete a Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition based ADHD rating scale on a weekly basis to monitor the patient's ADHD symptoms. At the end of each week, parents, and teachers should review adverse effects and measure the child's progress towards achieving the target goals.[7] Afterwards, the frequency of monitoring for efficacy using the ADHD rating scale can be reduced to two to four times a year.

Every month, the clinician should assess the patient's response to the medication by assessing the levels of core symptoms and noting improvements in target goals. In addition, the clinician should monitor for adverse effects and measure pulse, blood pressure, and weight. The AAP recommends that these physician visits should occur on a monthly basis, until the patient is consistently improving with regards to their ADHD symptoms. Afterwards, the patient should see the clinician every 3 months during the first year of treatment. These visits can then be reduced to twice a year until the child is achieving clear progress and the symptoms are stable.[7]

Community pharmacists can educate patients with ADHD and their families on how to monitor the efficacy of their medications. Since these patients visit the pharmacy on a regular basis to pick up medication refills, pharmacists are able to evaluate side effects and remind patients to schedule regular follow-up visits with their physician.

Table 1. Medication-specific side effects[12-15]

	Common Side Effects (≥ 5%)	Less common Side Effects (<5%)	Additional Precautions
Stimulant medications	Nausea, vomiting, abdominal pain, headache, insomnia, ↓ appetite, weight loss	Irritability, altered mood, ↑ heart rate	High abuse potential*; use with caution in patients with a history of drug dependence. May exacerbate underlying tics; therefore use with caution in patients with a history of a tic disorder.
Atomoxetine	Nausea, vomiting, abdominal pain, headache, somnolence, ↓ appetite	↑ blood pressure, ↑ heart rate	May increase risk of suicidal thoughts; report worsening or new psychiatric problems (e.g. suicidal thinking, unusual changes in behavior).
Guanfacine ER, Clonidine ER	Headache, insomnia**, somnolence, fatigue, abdominal pain**, xerostomia***	Nausea, irritability, altered mood, ↓ appetite, ↓ blood pressure	Use with caution in children with a history of cardiovascular disease, hypotension, or syncope. Sudden discontinuation can result in rebound hypertension. Use of alcohol or other CNS depressants can increase risk of adverse reactions.

* except Concerta due to dosage formulation

***guanfacine only, ***clonidine only*

Monitoring and Management of Specific Side Effects

The potential side effects and precautions that have been reported with certain ADHD medications are included in Table 1 on page 20.

Nausea, vomiting, and abdominal pain

These adverse effects have been observed with both stimulant and non-stimulant medications.[12] They usually occur more frequently during initiation of a medication, but disappear after a few weeks. If a patient presents with nausea, vomiting, or stomach ache, the pharmacist should recommend that the patient takes the medication with food. In some cases, if there are no improvements after a couple of weeks, the pharmacist should recommend a visit to the doctor, as dose adjustments may be needed.[16]

Headache

Headache is a common adverse effect observed with all ADHD medications, with rates of 10% reported across medications.[17] Stimulant medications and α2-agonists have a higher incidence of headache than atomoxetine.[15,18] Headaches may disappear after a few weeks on the medication; but if they do not, headaches can be initially managed with over the counter products.[16] If the headache persists or is severe, a dose reduction may be needed, or a change from the current medication to atomoxetine.[15]

Altered mood, irritability

Studies have generally shown improvements in mood and irritability during stimulant therapy.[14] However, irritability has been observed with some patients on stimulant therapy. This is largely explained by the child experiencing a "stimulant rebound," or a period of time during which the medication is wearing off. The irritability may be accompanied by negative mood, fatigue, or increased activity. If a patient is experiencing these rebound symptoms, the pharmacist could recommend a visit to the doctor to increase the dose or to change the scheduling of the medication. The pharmacist could also recommend the physician prescribe a long-acting or prolonged-release medication in place of a short-acting one in order to prevent rebound.[19]

Irritability has also been observed with guanfacine and atomoxetine, although it has not been determined whether the mood changes were caused directly by the medication or due to an underlying condition.[15,20] As with stimulants, the pharmacist can counsel patients who are experiencing mood changes to ask their physician if a dose adjustment may be needed.[14]

Insomnia

Sleep problems experienced by patients with ADHD are associated with either ADHD medications or the ADHD condition itself (due to a rebound effect).[21] Different classes of ADHD medications may affect sleep in different ways. In one study, methylphenidate lead to a shorter duration of sleep.[22] Another study also showed that both methylphenidate and atomoxetine increased sleep latency; however atomoxetine to a lesser degree than methylphenidate.[23] Patients presenting with depressive symptoms are more likely to experience these sleep problems.[24]

Pharmacists can counsel patients who are experiencing insomnia while on an ADHD medication. Pharmacists should take a history of sleep problems before starting the medication. If the patient starts to have sleep problems, a sleep diary can be suggested to monitor their sleeping patterns.[21] The pharmacist could also suggest using sleep questionnaires, such as the Children's Sleep Habits Questionnaire in order to monitor changes in sleep.[25]

According to the European Guidelines on Managing Adverse Effects of Medication for ADHD, the first step to managing sleep problems is to employ sleep hygiene and behavior therapy.[21] Some methods to improve sleep include scheduling regular bedtimes, avoiding TVs or bright lights close to bedtime, using the bed for sleeping only, and avoiding drinks containing caffeine. The child could also get up for a short period of time if he or she is having trouble sleeping.[21]

If the patient is still experiencing insomnia while on stimulants, dose adjustments may be required. If the cause of sleep problems appears to be return of energy due to the dose wearing off (rebound effect), the physician can consider adding a small dose of short-acting stimulant in the late afternoon (taken after school). The physician can also consider switching to a longer acting agent, such as Concerta or Adderall XR. If the cause of sleep problems appears to be due to too much stimulant activity, the physician can consider reducing the stimulant dose in the evening or using a medication that is shorter-acting.[25] If dose adjustments are not effective, the patient may need to switch to a non-stimulant.

Although the addition of another medication to a child's regimen is a last line approach, it can be considered to treat sleep disturbances. Melatonin has been shown to advance sleep onset and reduce sleep latency in children with insomnia.[25,26] Melatonin can be used in children at least 6 months old at a dose of 2–5 mg orally 3–-4 hours before bedtime.[27] A low dose of clonidine given at bedtime may be effective for sleep disturbances associated with ADHD or its treatment; α-agonists are the most widely used medication to address insomnia in children with ADHD.[28]

If these methods are ineffective, the child could be evaluated for restless leg syndrome (RLS) or symptoms of RLS, which has been estimated to be associated with up to 44% of ADHD patients[29] and can contribute to problems sleeping.[25]

Somnolence

On the other hand, some patients may complain of somnolence while taking ADHD medications. This side effect is more commonly seen among patients taking atomoxetine or an α2-agonist.[15,25] These medications should be taken at

bedtime instead of in the morning. Although there are no published guidelines on managing somnolence in children on ADHD medications, the dose could also be reduced or be divided twice a day if the child is experiencing symptoms.[30]

Reduced appetite, weight loss, and growth delay

Reduced appetite is commonly seen with stimulants and amoxetine.[15] This is especially problematic with extended-release medications, which peak about 4 hours after they are taken. A child taking his or her medication in the morning may lose their appetite by lunchtime.[16]

Reduced appetite can lead to weight loss and growth delay. One study estimated an average of 1 cm deficit in growth per year for the first 1–3 years of stimulant treatment, and the effects on growth delay could be dose dependent. However, the delay in growth normalizes over time, and discontinuation of treatment may be followed by a period of accelerated growth rate resulting in normal height and weight.[25,31]

The pharmacist should recommend careful monitoring of weight, height, and body mass index every six months for all children prescribed ADHD medications.[21] This will help the clinician plot the height and weight on standardized national charts to determine if the child is growing normally.[25] The patient's appetite should be monitored as well.[21]

To manage these side effects, the child can be counseled to take the first dose after a meal so that the child can eat while he or she still has an appetite.[30] The child can also be given nutritious, high-energy snacks, and late evening meals.[29] Examples of high-energy snacks include fruit shakes, dried fruit and nuts, and whole wheat crackers.[32] There is little evidence to support switching classes of ADHD medication or taking drug holidays to prevent appetite loss or growth delays.[21] However, a reduction in dose can be considered if weight loss and growth delay are of concern.

Cardiovascular effects

Stimulant medications and atomoxetine have been shown to cause slight increases in blood pressure and heart rate.[15] In adult clinical trials, the mean increase in systolic blood pressure was 2.75 mmHg in poor metabolizers and 2.40 mmHg in extensive metabolizers. The mean increase in diastolic blood pressure was 4.21 mmHg in poor metabolizers and 2.13 mmHg in extensive metabolizers. The mean heart rate increase was 11 beats/min in poor metabolizers and 7.5 beats/min in extensive metabolizers.[33] On the other hand, clonidine and guanfacine have been reported to cause decreases in blood pressure and heart rate, while their sudden discontinuation may lead to rebound hypertension.[12,25,34] These cases are generally determined to be clinically insignificant, although rare cases may lead to blood pressure changes great enough to be considered hypertensive or hypotensive.[21] Although QT prolongation has been reported with methylphenidate, dexamfetamine, and atomoxetine, there is no evidence that these drugs have caused any clinically significant changes, such as severe cardiovascular events.[21]

Because some patients have experienced changes in blood pressure or heart rate while on these mediations, AAP guidelines recommend that patients should be screened for cardiovascular risk factors before starting therapy. It is recommended to avoid stimulants in children with known serious structural cardiac abnormalities, cardiomyopathy, serious heart rhythm abnormalities, and coronary artery disease. For any patient taking any ADHD medication, it is also recommended to check pulse and blood pressure both before treatment and while on therapy. AAP guidelines do not currently recommend routine electrocardiography monitoring for ADHD medications.[7]

Pharmacists should counsel patients to consult a physician if they are experiencing a sustained pulse rate that is higher than 120 beats/min or persistent tachycardia. If there is a sustained cardiovascular effect, the clinician may reduce the dose or recommend a drug holiday.[21]

Suicidal thoughts and behaviors

Suicidal attempts by ADHD patients may be due to ADHD itself, not necessarily because of an adverse effect of a medication.[21] Certain co-morbidities that are often associated with ADHD, such as depression and conduct disorders, may increase the risk of suicidal ideation. Other predictive factors of suicide include female gender, maternal depression, and a history of comorbid emotional and behavior problems.[25] Adolescents with epilepsy also have a higher risk for depression and suicidal thoughts.

There is no evidence that stimulants increase suicidal thoughts or behaviors. However, there has been a small, but statistically increased risk of suicidal thoughts shown for atomoxetine, leading to a black box warning regarding the risk for suicidal thoughts.[35] Therefore, families and caregivers should be counseled to recognize and report signs of suicidal thoughts and behaviors, especially if the patient has preexisting risk factors for suicidal behavior.[21]

Substance misuse and abuse

Substance misuse occurs when a prescription drug is used for a purpose other than what it was prescribed for, while drug abuse occurs when the user becomes dependent on the misused prescription drug and consumes unsafe amounts of the drug.[21]

Patients with ADHD are more likely to develop a substance use disorder than people who do not have ADHD if the ADHD is left untreated. The risk of substance use disorder is a concern for ADHD patients taking stimulants, which are highly abusable substances. Methods of stimulant misuse involve crushing pills to inhale/snort, crushing pills and injecting, and microwaving or melting to snort. Risk factors for ADHD drug misuse include conduct disorder, substance use disorder, and male gender.[25] The pharmacist can educate families on how to recognize these signs and risk factors for substance misuse. However, studies have also shown that these patients can be successfully placed on stimulant therapy, which controls the ADHD symptoms and therefore reduces their risk for substance use disorders.[25]

SIDEBAR CASE

CASE PRESENTATION (part 1)

KN is a 9-year-old girl who visits your community pharmacy with her mother to pick up a new medication. "Can you help me?" the mother asks. "My 9-year-old daughter has been recently diagnosed with ADHD and we are here to pick up Concerta. I heard that this medication can cause my child's growth to slow down. My child is already shorter than most of the children in her class, so should I be concerned?"

RESOLUTION

You explain to the mother and KN that stimulant medications such as Concerta (methylphenidate) can lead to weight loss and growth delay due to their effects on decreasing appetite. However, you reassure them that studies have demonstrated that the delay in growth usually normalizes over time. Furthermore, if the child eventually stops the ADHD medication, the discontinuation of the medication can result in a period of accelerated growth rate. Following discontinuation, the child can eventually reach normal weight and height levels. You emphasize the importance of measuring the child's weight, height, and body mass index every six months at clinician visits to assess KN's growth. You also advise the mother to monitor the child's appetite levels.

You also tell the mother and child that there are several ways to prevent and/or manage weight loss and growth delay. The child can eat a balanced breakfast before taking Concerta every day, so that she can eat breakfast while she still has a full appetite. She can also consume healthy, high-energy snacks such as dried fruits and nuts and whole wheat crackers.

CASE PRESENTATION (part 2)

KN's mother returns to your pharmacy one month later. The mother says, "My daughter has been taking the Concerta every day. It has been helping with her ADHD symptoms, but now we have a new problem. She is having trouble falling asleep every night, and sometimes it takes her up to 3 hours of lying in bed before she can fall asleep! Is this normal? Are there any sleeping pills that you would recommend for her?"

RESOLUTION

You tell the mother that insomnia is a common side effect in children who are taking stimulants. This may be due to the return of energy due to the dose wearing off, or the excess of energy caused by an excessive dose of the stimulant medication. You explain that taking sleeping pills is not the first choice recommendation to treat her insomnia. Instead, the first step to addressing the sleep issue is to use sleep hygiene and behavioral therapy. Some of these methods include having scheduled bedtimes, avoiding watching TV or using bright lights close to bedtime, using the bed only for sleeping, and avoiding caffeine containing drinks before bedtime. If these methods are ineffective, the clinician can consider a dose decrease, use of a shorter acting agent, or the use of melatonin to help the child sleep. You counsel the mother to use a sleep diary to monitor the child's sleeping patterns.

If the patient using ADHD medications shows signs of drug misuse and abuse, the patient should be referred to a clinician. The addiction should be treated first, and then the ADHD should be treated soon afterwards. The patient's stimulant use should be closely monitored thereafter. For patients with high risk of substance misuse, atomoxetine could be used instead of stimulants.[25]

Tics

Stimulants have been suggested to exacerbate or unmask underlying tics through their mechanism of increasing dopamine levels in the synaptic cleft.[19,25] In contrast, atomoxetine does not worsen tics, and guanfacine and clonidine have been shown to improve symptoms of tic disorders.[25,36]

Tics can often subside on their own, even while the patient is still taking the stimulant medication. The tics also often disappear upon discontinuation of the medication.[19] Therefore, the pharmacist can recommend that the patient be observed for three months before considering a change in medication therapy.[11]

If the tics are intolerable, but the patient's ADHD symptoms are adequately managed by the stimulant, the clinician can use an antipsychotic to suppress the tics rather than discontinuing the stimulant.[25] Studies have shown that stimulants can be safely and effectively used in ADHD children who present with tics.[37]

If the tics are intolerable and the ADHD is not well controlled on the current stimulant, the patient can switch to atomoxetine or guanfacine. Although clonidine usually reduces the frequency and severity of tics, the worsening of tics has been observed in one-fourth of cases treated with clonidine.[25]

Psychotic symptoms

Psychotic symptoms observed in children taking ADHD medications include hallucinations or delusions, as well as symptoms of mania, hypomania, and agitation. However, there is little evidence implicating ADHD medications as the cause of these psychotic symptoms.[21]

Nevertheless, if the family is concerned that the psychotic symptom is due to the medication,

they can be advised to speak to the clinician about reducing the dose or discontinuing the medication.[25] Once the psychotic symptoms subside, the patient can be restarted on a different ADHD medication.

Conclusion

Pharmacists can play an active role in addressing patient concerns and helping patients maximize the benefits of ADHD pharmacological therapy. Pharmacists can effectively help patients manage common side effects such as gastrointestinal side effects, headaches, irritability, insomnia, somnolence, weight loss, and growth delays. They can also address concerns regarding cardiovascular effects, suicidal thoughts, substance misuse and abuse, and tics. Given the importance of pharmacological therapy in managing symptoms of ADHD, pharmacists are at the forefront in the management of ADHD therapy.

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(4) Click the Test link to take the quiz.

Note: If this is not the first time you are signing in, just scroll down to Homestudy/OnDemand CE Credits and select the quiz you want to take.

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Naloxone Increasing Access to Reduce Overdose-Related Deaths

With deaths from prescription drug abuse reaching an all time high, doubling from 1999 to 2013[i], health care professionals, policy makers, and advocates are looking for solutions to address the issue. While some states have taken action to restrict access to prescription narcotics – prescription drug monitoring programs, limits on days supply that can be dispensed, encouragement of the use of abuse deterrent formulations – others are looking to increase access to life-saving opioid reversal agents.

Naloxone works by antagonizing the mu receptor, has no addictive potential, and has virtually no pharmacological effects if the patient has not taken an opioid. Naloxone has traditionally been used in the hospital setting and available under the trade name Narcan®. However, there are now ways to access naloxone products that can be administered outside of the hospital through the use of an auto-injector or with a kit that adapts the injected formulation into a product that can be administered intranasally.

Evzio®, Naloxone Auto-injector

New to the market in 2014, Evzio® is an auto-injector device that provides visual and auditory cues for administration by a family member or caregiver, with no medical training. Designed to be pocket sized and withstand "temperature excursions" up to 104°F, it is meant to be kept on hand by those who may need it – or their caregivers.[ii] To assist patients with cost, the manufacturer, Kaléo, offers a patient savings card and patient assistance program for those who qualify.[iii]

Naloxone, Intranasal Kits

Another method of using naloxone in the out patient setting is intranasal administration of the injectable product. Of note, there have been no FDA approved products marketed using this approach, though one may be approved in the future. According to *Pharmacy Times*, it has been reported that the FDA has granted Fast Track designation to a product in development by Adapt Pharma.[iv] Despite a lack of FDA approval, there has been significant attention given to intranasal naloxone use, due to the low cost of obtaining the kits used to adapt the injectable product.

Pharmacist Involvement

Pharmacists have the opportunity to play a key role in addressing America's prescription drug overdose crisis. Pharmacists are in a key position to identify patients who are obtaining prescriptions from multiple prescribers or are at risk of overdose due to abuse, medication interactions, or comorbidities. Some states have implemented policies that allow pharmacists to dispense naloxone to not only patients at risk of overdose, but also to their caretakers. Others, starting with New Mexico and California are allowing pharmacists to directly prescribe naloxone to patients who are in need of access to the life saving drug. In lieu of prescriptive authority for the lifesaving drug, pharmacists in Rhode Island, Washington, and elsewhere have entered into collaborative practice agreements with prescribers in order to more easily provide their patients with access to naloxone.

All pharmacists should be sure they are up-to-date on the products currently available on the market and fully understand the risks and benefits of naloxone use so that they can identify and counsel the patients who need it. To learn more, many resources are available from the Centers for Disease Control and Prevention's or from the Office of National Drug Control Policy's websites.[v,vi]

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Article provided by National Alliance of State Pharmacy Associations.

Do you know a pharmacy technician ready to take on more responsibility in the pharmacy?

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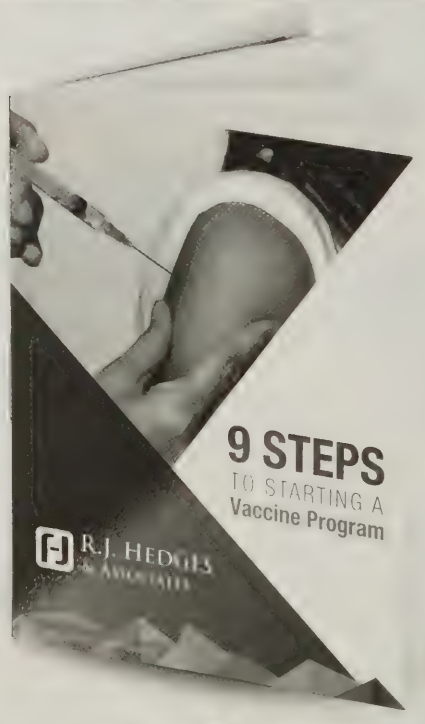

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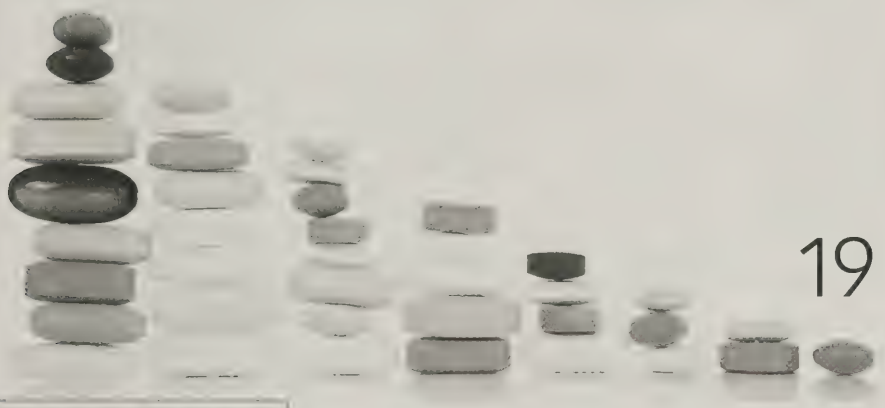

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Special thanks to Graphtech, Advertising Sales and Design

Dear Fellow MPhA Members,

I thank you, MPhA thanks you, and our profession thanks you. Your response to my "ask" and invitation to serve MPhA and our profession is appreciated. Whether volunteering to be an active member or stepping up to serve as chair of a committee, task force, or network, we are engaged to advance our beloved pharmacy profession.

Happy belated American Pharmacists Month and National Pharmacy Technician Day on October 20! I am grateful for the American Pharmacists Month Task Force, Communications Committee, Professional Development Committee, and MPhA staff for their great efforts to celebrate you during October! I hope that you were able to celebrate at your pharmacy and/or with us. If you had a celebration or event, please share your stories or photos with MPhA.

I would like to share recent initiatives and upcoming activities that reflect MPhA's continued effort to engage members and further our mission. One major initiative is the change from a traditional monthly Board of Trustees meeting to bi-monthly meetings (September and November in 2015; January, March and May in 2016) to create opportunities for **bi-monthly General Membership Programs** (October and December 2015; February and April 2016). While all members are still invited to attend Board meetings, the opportunities for bi-monthly General Membership Programs enable members to earn continuing education (CE) credits, network, and socialize at our new headquarters.

On October 15, MPhA held a CE program and committee fair. The CE program, *Global Alliance of Drug Information Specialists (GADIS) Webinar Series 2015: Medication Errors*, was offered thanks to the effort of Mary Kremzner, former MPhA Trustee and Speaker, and currently a pharmacist at the Food and Drug Administration. The committee fair enabled members to identify, recognize, and sign-up to volunteer through talking with many chairs and co-chairs who exhibited their committee's activities and plans for the year. Similar upcoming General Membership Programs include a networking and holiday social on December 17, an advocacy and professional development program in February 2016, and a new practitioner focused program in April 2016. Please check our website for specific details and registration as the dates draw closer.

In keeping my, or better yet our, presidency's theme *"Ask Me 2 about MPhA,"* I shared "Ask Me 2 about MPhA" buttons at the October 15 program and still have extras for you to pick up at MPhA headquarters. Please wear the button, invite a non-member to have a conversation with you, and ask them to join MPhA. The button also says "Ask your pharmacist about your medications," so take a minute and encourage your patients to ask you about their medications. We are our profession's best ambassadors.

MPhA's headquarters has enabled us to host two other CE events with our partners, the three Maryland schools of pharmacy and the MPhA Foundation. On October 24, the Offices of Experiential Education of all three schools of pharmacy collaborated to present a Preceptor Development Workshop, *Rotation Roadmap: Driving Your Students to Success*. On November 7, MPhA Foundation presented an all-day Leadership Development Workshop for new practitioners, emerging leaders, and 4th year students. It's great to see our community coming together and MPhA's headquarters being used effectively for common purposes. Collaboration is powerful for our future and the profession.

Finally, I want to share my engagement at the local, national, and international levels where I proudly represented and promoted MPhA. In September, I presented a session on pharmacists' patient care services and economic outcomes at the Maryland Chronic Disease Conference in Baltimore, MD and attended the Maryland Public Health Association Annual Conference. I was also invited to present on MTM at the Agency for Health Research and Quality Health Care Innovations Exchange MTM Learning Community Meeting in Houston, TX. In October, I presented a poster at the International Pharmaceutical Federation World Pharmacy Congress in Dusseldorf, Germany and attended the National Community Pharmacists Association in National Harbor, MD. Besides providing visibility for MPhA at these meetings, I was able to gain new ideas and insights to share with you at future MPhA programs.

As always, I am grateful for your membership and support, as well as the leadership and service of the MPhA Board of Trustees, committees, task forces, and network chairs and members, as well as staff. Together, let's continue to carry out MPhA's mission: *Strengthen the profession of pharmacy, advocate for all Maryland pharmacists, and promote excellence in pharmacy practice*.

Sincerely,

Hoai An Truong

Hoai-An Truong, PharmD, MPH

President

Know Your Pharmacist, Know Your Medicine

MPhA Video Contest

MPhA and the Professional Development Committee hosted a viewing party on October 1, 2015 at MPhA Headquarters to announce the winner of the MPhA Video Contest and to kick off American Pharmacists Month! Students were asked to create an engaging video to promote pharmacists services, especially how pharmacists can collaborate with other health care professionals in a team approach. Specifically, how the pharmacist is useful to the providers and the patients. The Professional Development Committee's goal is to inspire other health care professionals to get more information on how to collaborate with us. The winning team received a grand prize of $250. Thank you to all the teams who participated! All the student pharmacists did a great job. You can view their videos on MPhA's Facebook page.

First place: Team Underdawgs from University of Maryland School of Pharmacy

Second place: Team Inspire from University of Maryland School of Pharmacy

Third place: Team NDMU RX from Notre Dame of Maryland University School of Pharmacy

Student pharmacists who participated in the MPhA Video Contest

#Pharmacist Tweet-a-Thon

Thank you to all who participated in the third annual #Pharmacist Tweet-a-Thon to kick of American Pharmacists Month on October 1, 2015. This year, we had more than 6,100 tweets with the #Pharmacist! While it did not beat last year's record of 11,100 tweets, we did come close to the number of total impressions made (18,749,422 in 2014). We appreciate all those who shared stories that celebrated pharmacists and showed social media the positive impact pharmacists have on their patients and communities.

2015 (metrics from Symplur):

16,781,367 Impressions, **6,128** Tweets
982 Participants, **255** Average Tweets/Hour
#1 trending health care hashtag on Symplur Oct. 1, 2015
62 pharmacy organizations/entities/schools participated

Medication Error CE Program

MPhA hosted a free continuing education program and networking event, *Global Alliance of Drug Information Specialists (GADIS) Webinar Series 2015: Medication Errors* on October 15, 2015 at MPhA Headquarters. A MPhA committee fair was also held before the program where individuals were able to meet with chairs/co-chairs to discuss committee activities. Thank you to all the chairs/co-chairs who took time to promote our MPhA committees. We are also very appreciative for the support from the Food and Drug Administration and Speaker Lena Maslov.

Food and Drug Administration pharmacists in attendance at the October 15 program

Preceptor Development Workshop

On October 24, 2015, MPhA, Notre Dame of Maryland University School of Pharmacy, University of Maryland School of Pharmacy, and University of Maryland Eastern Shore School of Pharmacy sponsored a free continuing education program and networking event, *Rotation Roadmap: Driving Your Students to Success*, held at MPhA Headquarters. The workshop was opened to preceptors in all practice areas. Attendees identified unique practices to create valuable rotation activities and experiences, discussed how to evaluate students' performances, learned techniques for providing constructive feedback, and explored how to utilize rotation students more efficiently to extend each pharmacy practice. Thank you to our speakers Mark Brueckl, Nicole Culhane, Mark Freebery, William Harbester, and Toyin Tofade for all the hard work in developing this workshop!

Preceptor Development Workshop speakers

Your CE Requirements: WHAT WILL CHANGE IN 2016?

This is a reminder that effective **January 1, 2016**, PTCB will implement a change in continuing education (CE) recertification requirements for Certified Pharmacy Technicians (CPhTs) that reduces the allowable number of CE hours earned via college/university courses from 15 to 10. Beginning in 2016, a maximum of 10 of your 20 CE hours may be earned by completing a relevant college course with a grade of 'C' or better. This is part of a series of Certification Program changes PTCB announced in early 2013 to advance pharmacy technician qualifications by elevating PTCB's standards for certification and recertification.

PTCB is placing greater emphasis on attaining a diverse portfolio of technician-specific education to recertify. As the nation's healthcare system evolves, pharmacy technician roles are shifting and expanding to better support pharmacists, and it is essential that CPhTs be educated on a variety of relevant topics.

PTCB has already made several in a series of planned Certification Program changes. Changes in recertification requirements to date have included: effective in April 2014, adding one hour of required patient safety CE; effective in January 2015, requiring all earned CE hours to qualify as technician-specific; and reducing the number of allowable in-service CE hours from 10 to 5. By 2018, PTCB will completely phase out in-service CE hours.

By 2020, PTCB will revise requirements for pharmacy technicians who are applying for initial certification. New certification candidates will be required to successfully complete an education program accredited by the American Society of Health-System Pharmacists (ASHP)/Accreditation Council for Pharmacy Education (ACPE).

PTCB's series of Certification Program changes support and advance improved patient care and safety throughout pharmacy practice. The changes are the result of a PTCB initiative which began with a 2011 summit on future directions for pharmacy technicians. Summit findings, combined with results from two profession-wide surveys, called for decisive changes.

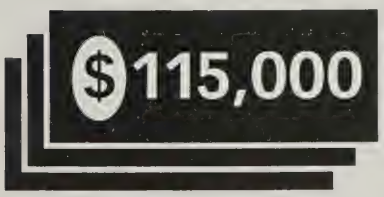
New Member Benefit Helps MPhA Members Save Thousands on Student Debt

Student loans can be a minefield. The average pharmacist graduates with a student debt of $115,000. Many graduates put off refinancing their student loans simply because they don't understand the process. MPhA has partnered with Credible to help our members save on their student debt. With Credible, graduates can explore their options to reduce interest rates and repayments. Credible is a simple, easy process. Fill out a single form, receive personalized refinancing offers and compare them side-by-side, and choose the offer that's best for you!

Student loan refinancing is not a one size fits all approach. As a general rule, refinancing makes the most sense when a borrower has high interest rates on his or her loans, a steady income, and a high credit score. Credible enables MPhA members to compare personalized refinancing offers from multiple lenders side-by-side, and choose the offer that's best for them. To learn more about student loan refinancing or to get a savings estimate, visit **www.credible.com/partners/MPhA.**

The largest barrier to refinancing is a lack of understanding. With that in mind, we wanted to pass along a few tips from Credible to think about if you are considering refinancing.

1. **Pick a goal.** For example, decide if you want to maximize your long-term savings or minimize your short-term payments.
2. **Refinance when interest rates are low.** Lenders generally provide better offers when interest rates are lower. For example, Credible currently has lenders with rates as low as 1.90%!
3. **Comparison shop.** Rates differ significantly from lender to lender. Use Credible to receive and compare offers side-by-side from multiple lenders.
4. **Consider refinancing only your high interest rate loans.** To maximize your savings, consider keeping your loans with very low rates (<4%), and refinancing those with higher rates.
5. **Consider adding a cosigner.** If your credit score is below 700, having a creditworthy cosigner can help you get a better rate.



Amount of debt the average pharmacist graduates with

Visit: www.credible.com/partners/MPhA

Pharmacists are "All Smiles" as Integral Part of Free Dental Clinic

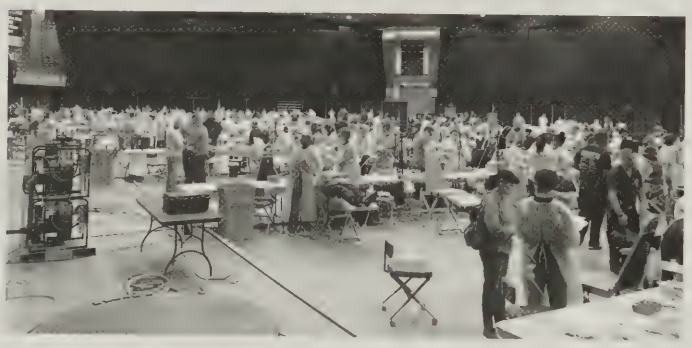
Eric Barbye, PharmD

Ashley Payne, PharmD Candidate 2017, University of Maryland Eastern Shore School of Pharmacy

As support for provider status grows, more people are beginning to realize the true value of pharmacists to the healthcare system. This could not have been better exemplified than at the Eastern Shore Mission of Mercy. The Mission of Mercy was a two-day free dental clinic held at the Wicomico Youth and Civic Center in Salisbury, Maryland on April 17 and 18, 2015. Free clinics like the Mission of Mercy are held at various locations throughout the country. Dental professionals, other healthcare professionals, and hundreds of lay volunteers came together from all over Maryland to provide free dental care for people who could not afford it otherwise. Out-of-state healthcare professionals were granted temporary licenses for this volunteer event.

About the Clinic

The Mission of Mercy was open to anyone 18 years of age and older, regardless of where they reside. Dental services that were provided included cleanings, fillings, extractions, some oral surgery, root canals, denture repair, and oral hygiene education.



Many of the patients seen had not received any oral care in years, and had very poor oral hygiene habits. However, there were also patients who had medical and prescription drug insurance, but no dental coverage. Regardless of socioeconomic status, every patient was incredibly grateful for the volunteers' work and the services that were rendered.

Providing Pharmacy Services

After receiving dental care, patients were given prescriptions that could be picked up at the pharmacy section of the clinic. Patients who were at risk for infection or experiencing pain from procedures were directed to the pharmacy where they received antibiotics, pain medications, or both. Prescribers had a predetermined formulary consisting of amoxicillin, penicillin, clindamycin, cephalexin, ibuprofen, and acetaminophen. In addition, prescribers had the option to write prescriptions for tramadol or hydrocodone/acetaminophen, which the patients were required to fill at an external pharmacy, since no narcotics were kept on site. The formulary medications were packaged and labeled prior to the event to streamline the dispensing process. Student pharmacists and local pharmacy technicians received prescriptions from the patients and screened for allergies and current medications. After assigning a prescription number, the prescription was passed to one of the pharmacists on site, who then labeled the appropriate vial and double checked the prescription for accuracy. The pharmacist (or student pharmacist under direct supervision) then dispensed the medication and counseled the patient on proper medication use.

Making it Count

When taking the Oath of a Pharmacist, one pledges, "I will consider the welfare of humanity and relief of suffering my primary concerns."[1] Pharmacists and student pharmacists alike agreed that the Eastern Shore Mission of Mercy provided a great opportunity to exercise part of the Oath.

Nineteen pharmacy volunteers staffed the pharmacy during the two-day clinic. Pharmacy volunteers included student pharmacists from the University of Maryland Eastern Shore School of Pharmacy (UMES SOP), local pharmacy staff from Community Pharmacy and Pemberton Pharmacy, and pharmacists from a wide array of practice settings including independent pharmacies, hospital pharmacies, and even a federal pharmacist from the U.S. Food and Drug Administration. Although the Mission of Mercy was held on the Eastern Shore, pharmacists traveled from across the state to help staff the pharmacy. "It is always a pleasure to participate in a Mission of Mercy event," recalled CDR Yvette Waples, a United States Public Health Service pharmacist who volunteered at the event. "This was my fifth time volunteering in this event in various locations and I am proud and grateful to have the opportunity to serve. I grew up on the Eastern Shore, and coming home to volunteer with fellow pharmacists and student pharmacists from UMES by meeting the public health needs of the community was rewarding."

Trish Draper, an independent pharmacist from Edwards Pharmacy in Centreville, Maryland, traveled nearly

70 miles to the southern Eastern Shore to volunteer at the Mission of Mercy. "Many of the patients would turn as they were about to leave and bless us for helping them. This event was much more personally rewarding than I had anticipated," Trish said. "Working with my peers, other healthcare professionals, and the many wonderful student pharmacists from UMES was also a pleasing and educational experience that I will fondly remember."

Feedback from student pharmacists was overwhelmingly positive as well. The students were able to practice their patient counseling skills while becoming familiar with prescriptions commonly issued after dental procedures. A first-year student pharmacist at the UMES SOP reflected on her experiences at the Mission of Mercy. "Volunteering at the Mission of Mercy was extremely gratifying. The patients were so thankful for the care they received, and it reaffirmed my decision to become a pharmacist."

The Mission of Mercy served a total of 1,094 patients over two days before operations ceased due to a shortage of dental supplies. Over half of the patients (553) were residents of Maryland, with other patients traveling from Delaware, Virginia, and beyond. At the end of over 24 hours of service, the pharmacy had dispensed 568 prescriptions, comprising 184 antibiotics and 384 pain medications. Due to allergies or drug-drug interactions with current medications, pharmacists consulted with prescribers to make 5 therapeutic interchanges to avoid potentially harmful adverse drug events.[2] Pharmacists were undoubtedly a crucial and valuable asset to the healthcare team at the Eastern Shore Mission of Mercy. Due to the success of the Eastern Shore Mission of Mercy, there are already plans to hold a third event in Salisbury in 2017!

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Pharmacy Time Capsules

By Dennis B. Worthen, PhD, Cincinnati, OH

1990

139,765 number of people in the United States have HIV/AIDS, with a 60 percent mortality rate

74 number of colleges of pharmacy in US

174,000 total number of pharmacists in US

31 percentage of actively practicing pharmacists are women according to a study in JAPhA (2006;46:322-330)

1965

The **Recombinant DNA Advisory Committee** approved the first experiments involving transfer of human genes for therapeutic purposes. Treatment was initiated on September 14 in a 4-year-old girl with adenosine deaminase deficiency.

The average **cost for a prescription** was around $3.50 according to 1965 Lilly Digest ($26.34 in 2015 dollars).

Older Americans Act passed. Services to the aged include disease prevention/health promotion services

1940

12.7 percentage of pharmacy sales that were for prescription items

$0.93 average prescription price

13 percentage of pharmacies that operated at a loss (reported by Lilly Digest) An additional 12% had less than 2% net profit.

Woodruff & Waksman isolated and purified actinomycin from Actinomyces griseus

1915

Mary Mallon, known as **Typhoid Mary**, arrested and returned to quarantine after spending five years evading health authorities and causing several further outbreaks of typhoid.

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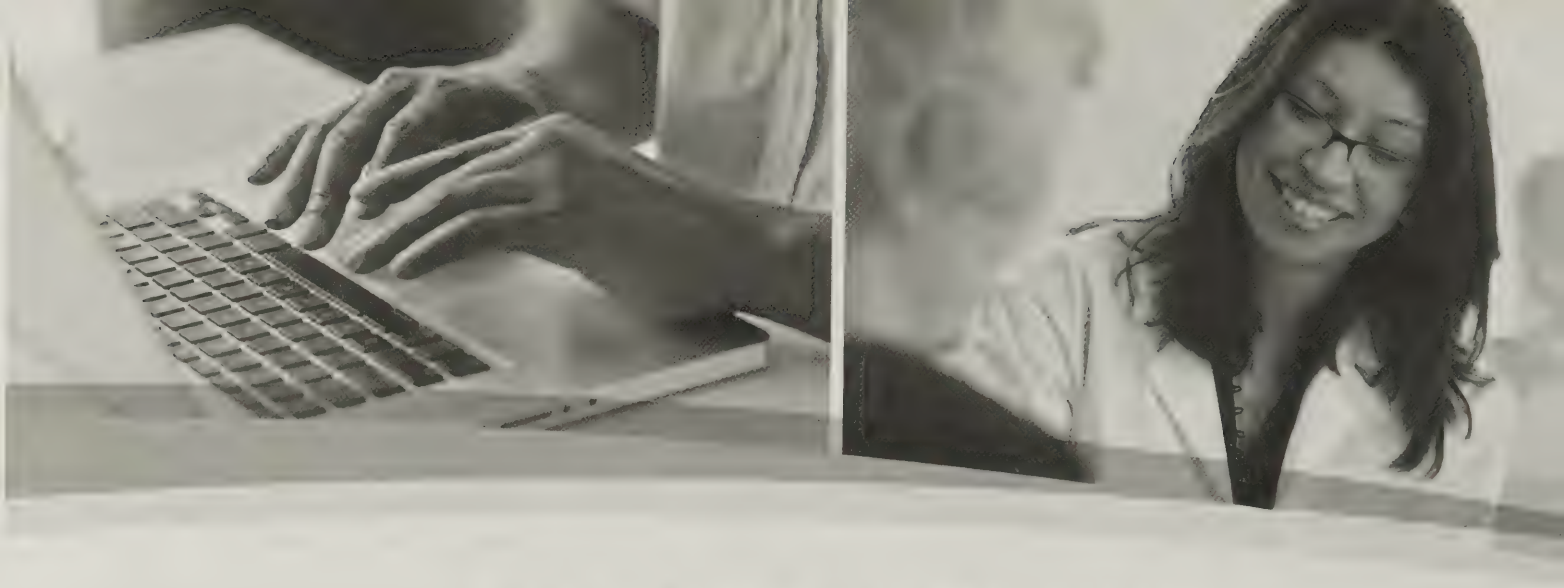

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Member Mentions

Kelechi Aguwa, PharmD is the recipient of the American Pharmacists Association Immunization Champion Award: Individual Practitioner. The Immunization Champion Awards recognize individuals and organizations within the profession of pharmacy that have made extraordinary contributions towards improved vaccination rates within their communities. Kelechi is the first African American to win this award. He is the Pharmacy Manager at Walmart in Baltimore, MD and after 2.5 years of practice, he is approaching 1000 dispensed vaccinations. Kelechi graduated from the University of Minnesota College of Pharmacy in 2012.

Past President **Magaly Rodriguez de Bittner**, PharmD, BCPS, CDE, FAPhA is one of the honorees of the 2015 Pinnacle Awards presented by the American Pharmacists Association Foundation. She is recognized with the Individual Award for Career Achievement which is given to an individual who has demonstrated exceptional leadership in enhancing healthcare quality and medication use. She was recognized at the Pinnacle Awards Innovation in Pharmacy Practice lecture at the University of Maryland School of Pharmacy on September 15, 2015. Magaly is a professor in the Department of Pharmacy Practice and Science and associate dean for clinical services and practice transformation at the University of Maryland School of Pharmacy.

Chairman **Dixie Leikach**, RPh, MBA was the recipient of the Merck & Co. Vanguard Leadership Award presented by Lambda Kappa Sigma Pharmacy Fraternity (LKS). She was recognized at LKS 2015 Annual Convention in St. Louis, Missouri on August 1, 2015. This award is presented to an alumni member who has made sustained exemplary contributions in her/his area of professional practice, and/or in professional associations, regulatory boards and in the community, emphasizing service to others, innovations and entrepreneurial spirit. Dixie and her husband, Neil, own three independent community pharmacies in the Baltimore area.

Maryland Board of Pharmacy Executive Director **LaVerne Naesea**, MSW is retiring on December 31, 2015 after serving in her role since February 2000. LaVerne graduated from Salisbury State University and completed her graduate studies at the University of Maryland School of Social work and Community Planning. She has successfully prepared, testified, and ushered through several important state and federal legislative bills related to pharmacy practice, health care, aging initiatives, and program funding of private, state, and federal agencies. In addition, she has managed programs and operations for State regulatory boards appointed to ensure quality public health and safety in the areas of prescription drug distribution and dispensing, practitioner monitoring and education, and patient advocacy.

Do you have good news to share?

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Special Considerations for

Patients With Diabetes Mellitus Undergoing Transitions of Care

A REVIEW

Felicia Bartlett, PharmD Candidate 2017, University of Maryland School of Pharmacy
Kathleen Pincus, PharmD, BCPS, Assistant Professor, University of Maryland School of Pharmacy

Currently, over 29 million people in the United States live with diabetes including approximately 8 million who are undiagnosed.[1] It is expected that this number will continue to grow, with an estimated 1 in 3 US adults affected by diabetes by 2050 due to increases in minority populations at higher risk for the disease, the large aging population, and projected longer life spans.[2] With the increase in prevalence of diabetes, one can expect that overall costs associated with the disease will increase as well. The economic impact of diabetes is $245 billion annually with $176 billion in direct medical costs.[3] These alarming numbers impart the need for better care and management of patients with diabetes.

With the implementation of the Affordable Care Act in 2010, healthcare is largely focused on improving transitions of care and reducing hospital readmission rates. As a result, care transitions are emerging as a key part of pharmacy practice and pharmacists are taking lead roles in care transition initiatives. Given the proportion of Americans living with diabetes, it is not surprising that diabetes is the third highest comorbidity associated with hospital admissions and discharges.[4] The readmission rates for diabetic patients with complications and those patients without complications is 20.3% and 8.5%, respectively.[5] Reasons for readmissions among patients with diabetes are multifactorial, from low patient health literacy and other social factors to failure of the health system, specifically the discharge process.[6] The prevalence of diabetes in patients admitted to the hospital and the emphasis on reducing readmissions highlight the importance of understanding the unique needs of patients with diabetes undergoing transitions of care.

Past literature centered on the transition of diabetes care from childhood to adulthood, while current literature has shifted toward looking at effective hospital discharges and transferring diabetes care from inpatient to outpatient settings. The National Transitions of Care Coalition (NTOCC)[7] outlines the essential outcomes for general transitions in care, as well as the processes involved, including care coordination, communication between care settings and education. The outcomes focus on patient and provider satisfaction, healthcare utilization and general well being, with the overall goal of ensuring that a transition is effective and safe.[7] Diabetes transitions of care are no exception to these best practices.

In a literature review by Cook et al.,[8] challenges of diabetes management were addressed from the health system and patient perspectives. Lack of follow-up, pressure to discharge patients quickly and nursing workload are among the many factors that impact diabetes care. With these in mind, the authors defined "effective diabetes discharge" as having three main aspects: concise documented discharge plan, patient access and provider access to the plan.[8] Other articles expand on this idea by looking at discharge education by pharmacists or other health care providers. Another article analyzed post-discharge follow-up in patients with either newly diagnosed diabetes or prior diabetes, and found that patients without follow-up had higher costs associated with care.[9] Patients discharged on insulin and those with a new diagnosis of diabetes were more likely to return for follow-up.[9] The discharge and follow-up processes encompass the three key parts of a transition: coordination, communication and education. Current literature focuses primarily on coordination and education and further explores the role of formal transitions of care clinics to improve discharge and reduce readmission rates. The transition of diabetic patients from inpatient to outpatient care is a complex process, with both health system and patient-related variables impacting effectiveness and safety. As diabetes emerges in the transitions of care realm, we as healthcare providers must understand what constitutes an effective and safe diabetes care transition, as well as what can be done to further improve the process. In order to supplement our growing knowledge of care coordination and education in care transitions, there is a need to look at communication among and within healthcare settings.

A subset of research calls attention to clinical inertia in diabetic care. Clinical inertia is defined as the failure to initiate or intensify diabetic therapy when clinically indicated.[10]

Both inpatient and outpatient clinical inertia has been recognized in this population. Retrospective studies analyze the change or lack of change to regimens in relation to glycemic levels. In one study of patients with uncontrolled diabetes, only 22.4% of patients had a change made to their diabetic regimen during admission.[11] Another study conducted by Cook et al.[12] analyzed average blood glucose levels during admission and categorized patients based on this number into tertiles with the third tertile as the highest average glucose level. The authors found that in the highest tertile 46% of patients did not have their insulin intensified, even though a pattern of basal plus bolus dosing was seen as tertile increased.[12] The literature shows that clinical inertia unfortunately does exist in the care of diabetic patients. The lack of timely hyperglycemic management could have negative effects on continued chronic disease management, future readmissions as well as control of other comorbid states. Research shows that hyperglycemia can negatively impact length of stay, infection management, cardiovascular mortality and the overall prognosis of patients with a broad number of conditions, such as coronary bypass grafting.[13,14,15,16]

With the retrospective nature of the studies on clinical inertia, little is known about the contributing factors in physician decision making. Comprehensive understanding of these decisions would benefit the development of targeted transition of care initiatives for patients with diabetes. As patients transition in and out of the healthcare system, communication is an essential aspect of managing their disease. Documentation of reasoning behind therapy change or lack of change is important for taking the next step in a patient's treatment plan. As mentioned previously, effective discharge involves both the documentation and communication of a plan to both patients and outside providers.[8] This may be of particular interest for discharges involving patients with diabetes as medication regimens, particularly those including insulin, may be complex and mistakes may have significant adverse effects on patient outcomes.

Furthermore, timely transmission of discharge summaries and other pertinent information is necessary. The NTOCC states that an effective transition involves a timely, accurate and complete transfer of information between and within health systems. A study by van Walraven et al.[17] showed that the availability of discharge summaries at the first follow-up visit correlated with a lower risk of readmission. Follow-up visits may occur within the same week of discharge or weeks following, so fast dissemination of a complete discharge summary is vital. Effective communication and understanding of provider decisions across health care settings is one more step toward achieving improved transitions of care for the diabetic population.

As patients transition in and out of the healthcare system, communication is an essential aspect of managing their disease. Documentation of reasoning behind therapy change or lack of change is important for taking the next step in a patient's treatment plan. As mentioned previously, effective discharge involves both the documentation and communication of a plan to both patients and outside providers.

Pharmacists are crucial to the transitions between care settings for the diabetic population. Not only do we serve as medication experts on treatment involving high-risk medications, but we are also a conduit for effective communication. On the inpatient end, clinical specialists can work within the healthcare team and make recommendations or dose adjustments as needed to combat clinical inertia. As patients prepare for discharge, pharmacists can educate them on their regimen and make patients and caregivers aware of any changes. Transition of care pharmacists can reinforce understanding of medication regimens as well as verify that patients have easy access to obtaining medications and following up with a provider. This pharmacist can provide the patient with education and resources regarding glucose self-monitoring and overall self-care. Transition of care pharmacists can ensure that patients are comfortable with their disease state management before making the transition to another care setting. In the outpatient setting, clinical specialists will manage patients long term; understanding what changes were made during admission and the impact it has on outpatient regimens is important. Patients' understanding of their disease will again be reinforced and the clinical specialist can engage the patient in his or her own healthcare, developing a long-term diabetes management and monitoring plan. The clinical specialist can also work with the healthcare team to address any other factors, such as diet and lifestyle that are impacting patients' control of his or her diabetes. Community pharmacists can identify newly diagnosed or recently discharged patients and offer specialized counseling. They should review medication changes with the patient and ensure that the patient has all supplies necessary for self-monitoring. The community pharmacist can help trouble shoot medication access issues that arise as a result of a hospitalization or medication changes. Pharmacists can empower the patient to manage all aspects of his or her disease and we are accessible to the patient at all levels of care. We have the ability to work with patients on a case-by-case basis to optimize their healthcare, assuring an effective and safe transition.

Transitions in care have an important role in the future of pharmacy. An

effective and safe transition of care requires three key processes: care coordination, communication between care settings, and education for patients and other healthcare providers. Pharmacists in a variety of settings are uniquely positioned to assist patients with diabetes throughout the continuum of care.

Literature focuses on diabetes care coordination and discharge education; however, we have the capability to improve therapy management by focusing on communication within transitions. Effectively communicating discharge plans to both patients and their providers is just one element in achieving overall continuity of care.

Pharmacists play an important role in developing each process as we continue to evolve diabetes care transitions in an effort to reduce costs and readmissions.

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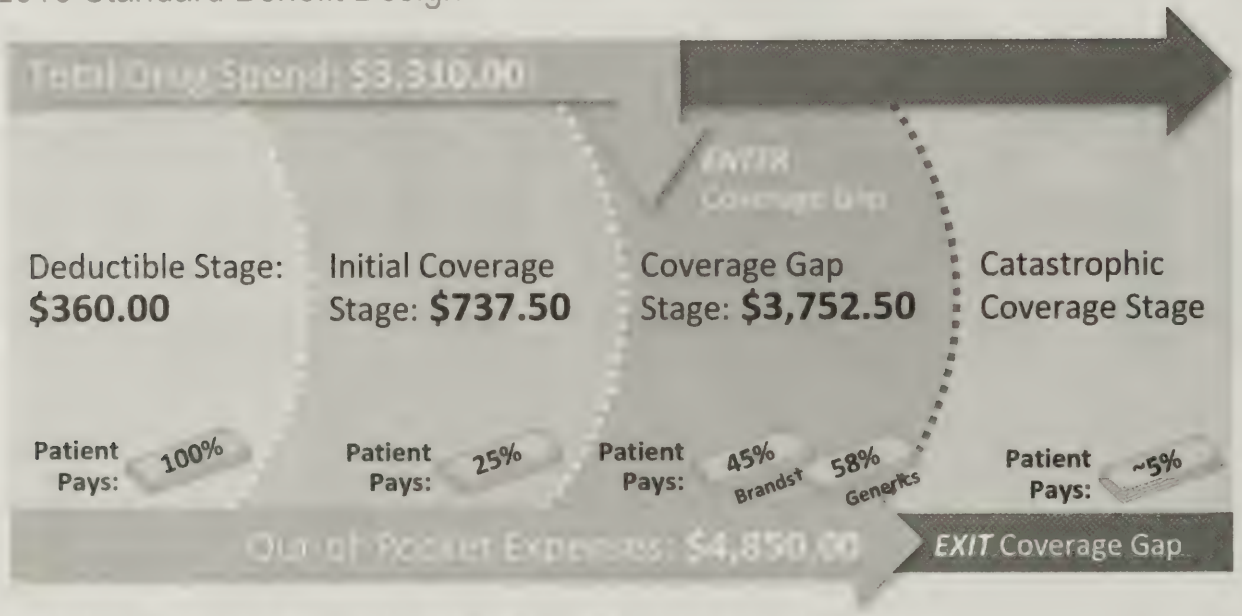
2016 Medicare Part D

Pharmacist Quick Reference Guide

Medicare's Annual Enrollment Period (AEP) for the 2016 plan year takes place October 15-December 7, 2015. During this time, your Medicare-eligible patients may choose to join or switch Medicare Part D plans. The information below can help you educate your patients about changes to the Medicare Part D program for 2016.

2016 Standard Benefit Design



2016 Low-Income Subsidy (LIS) Cost-Sharing Levels

Full Benefit Dual Eligible	Deductible	Copayments
Up to or at 100% Federal Poverty Level (FPL)	$0	$1.20 Generic/Preferred Multi-Source Drug $3.60 Other
Over 100% FPL	$0	$2.95 Generic/Preferred Multi-Source Drug $7.40 Other
Institutionalized Beneficiary	$0	$0
LIS Recipient (Full Subsidy)	**Deductible**	**Copayments**
Income at or below 135% FPL and limited resources‡	$0	$2.95 Generic/Preferred Multi-Source Drug $7.40 Other
LIS Recipient (Partial Subsidy)	**Deductible**	**Copayments**
Income below 150% FPL and limited resources‡	$74.00	Prior to Catastrophic Coverage Stage: • 15% Coinsurance During Catastrophic Coverage Stage: • $2.95 Generic/Preferred Multi-Source Drug • $7.40 Other

† *The 50% discount paid by brand-name drug manufacturers during the Coverage Gap Stage will count toward the patient's Out of Pocket Expenses (pushing them through the Coverage Gap); however, the additional 5% paid by the Medicare Part D plan will not.*

‡ *Resource limits are set annually by the Social Security Administration.*

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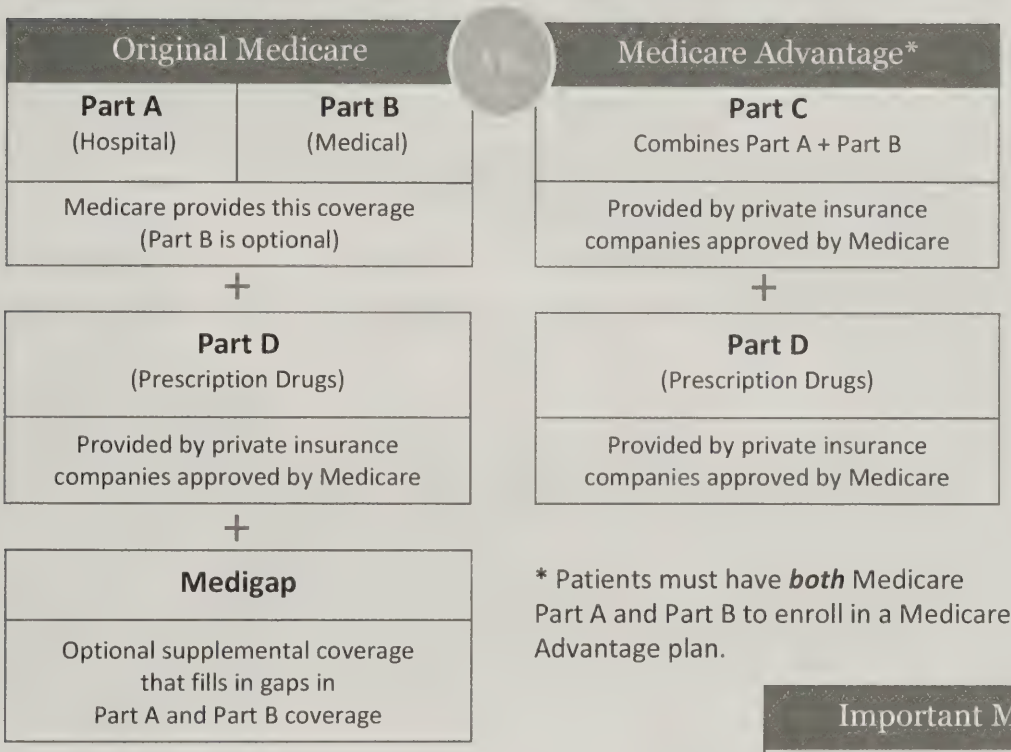
Medicare Refresher

- **Part A** — **Covers inpatient care**
  (e.g. hospital, skilled nursing facility care, home health care, hospice)
- **Part B** — **Covers outpatient care**
  (e.g. medical visits, DME, a few prescription drugs)
- **Part C** — **Voluntary medical benefit that combines Part A and Part B**
  (patient must continue to pay Part B premiums)
- **Part D** — **Voluntary prescription drug benefit**



* Patients must have ***both*** Medicare Part A and Part B to enroll in a Medicare Advantage plan.

$0 Generic Plans

Some Part D plans offer $0 co-pays for generic medications beginning on day one of coverage. These plans can help patients by lowering their drug costs and delaying their entrance into the Coverage Gap.

- **Familiarize yourself with the plans in your area that offer $0 generics.** This information may be obtained using Medicare's Plan Finder tool (*www.medicare.gov*).
- **Discuss benefits, safety of generics.** Educate your patients that these drugs are approved by the FDA and have the same strength, quality, and performance as brand-name drugs.
- **Look for cost-saving opportunities.** Offer to review a patient's medication profile to see if there are any opportunities to recommend lower-cost generics.

Important Medicare Dates

Oct. 15 – Dec. 7, 2015
During this time, your patients can join or switch Medicare Part D plans.

Jan. 1, 2016
If patients enrolled between October 15 and December 7, 2015, their coverage begins today.

Special Enrollment Period
Patients may switch or join plans only if they qualify for a Special Enrollment Period. Reasons may include moving to a different coverage area or losing creditable coverage. Patients also may elect to enroll in a 5-star Medicare Advantage plan during this time if one is available in their area.

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When to Cut Bait: Deprescribing Medications

Lauren Haggerty, PharmD Candidate 2016
Mary Lynn McPherson, PharmD, MA, BCPS, CPE
University of Maryland School of Pharmacy

Learning Objectives

After reading this article, the learner will be able to:

- Define polypharmacy and describe risks associated with use of five or more medications concurrently.
- Given a patient, describe a strategic process to assess the risks and benefits of medications and evaluate their eligibility for discontinuation.
- List at least 3 examples of medications which may be eligible for discontinuation in advanced illness and cite the evidence that supports deprescribing.

Key words: Deprescribing, medication management, polypharmacy

DEPRESCRIBING

Defined as "the systematic process of identifying and discontinuing drugs in instances in which existing or potential harms outweighs existing or potential benefits in the context of an individual patient's care goals, current level of functioning, life expectancy, values, and preferences."[1] The process of both effective prescribing and deprescribing requires shared decision-making between all involved parties, informed patient consent, and close monitoring. Pharmacists can play a pivotal role prior to prescribing, straight through recommending deprescribing. However, before even beginning the conversation of deprescribing, it is necessary to understand why it is so important to discontinue medications in the aforementioned instances.

POLYPHARMACY

Polypharmcy is the use of five or more medications, which is the most important predictor of harm in patients. The incidence of potentially inappropriate medications (PIM) has not surprisingly been found to increase with the number of medications the patient is taking, with 5 or more medications posing a significantly higher risk. It has been estimated that in 1000 ambulatory older patients, polypharmacy could be anticipated to cause PIM in about 235 of these patients.[2] Despite this knowledge, polypharmacy is quite common and causing a significant amount of harm to patients. A 2009 report estimates that the average 65–69 year old takes 14 prescriptions a year and the average 80–84 year old takes an average of 18 prescriptions a year. Furthermore, medication-related problems account for 27% of hospitalizations among seniors, making inappropriate medication use and polypharmacy a major concern.[3]

WHEN PATIENTS have an advanced illness, the dangers associated with potentially inappropriate medications may be even more pronounced. In a pharmacist-led geriatric oncology assessment, 234 senior cancer patients taking an average of 9.23 medications were found to have a 51% prevalence of PIM use. Polypharmacy (at least 5, but less than 10 medications) was found in 41% of patients, and excessive polypharmacy (10 or more medications) was noted in 43% of patients.[4] While each of these drugs individually pose risk, there is also a cumulative risk resulting from a combination of pharmacokinetic and pharmacodynamic interactions to consider.[1]

The goals of successful medication management should center on providing quality care based on patient and agent-related variables, patient involvement and consent, and careful monitoring. Medication management should also strive to be evidence-based and founded in the standards of practice. Finally, it is always important to consider the costs of a medication, both directly and indirectly through the costs of monitoring. By reducing polypharmacy, lowering medication-associated costs, promoting patient education, and engaging patients in their own medication management, deprescribing has the potential to not only prevent patient harm, but to benefit patient adherence as well.[5] To better achieve these goals of medication management, Scott et. al. recently proposed a strategic five-step deprescribing protocol which will be discussed below in further detail along with corresponding evidence supporting the practice of deprescribing and its positive effect on patient-important outcomes.[1]

STEP 1

Ascertain all drugs the patient is currently taking and the reasons for each one[1]

To begin, a thorough medication reconciliation should be performed. The Joint Commission defines this as "the process of comparing a patient's medication orders to all of the medications that the patient has been taking. This reconciliation is done to avoid medication errors such as omissions, duplications, dosing errors, or drug interactions."[6] When crafting and reconciling the medication list, be sure to consider not only prescription medications, but also over the counter medications, vitamins, herbals, or medication samples the patient may be taking. Furthermore, it is important to inquire about medications that are frequently overlooked, such as vaccines and inhaled, injected, or topical products. Be sure to question the indication for each medication for the specific patient being reviewed. This is an opportunity to think critically about each medication. Questions to consider include "Was it prescribed to counter the adverse effects of another agent? Was the diagnosis substantiated? Is the patient taking the medication as prescribed or even taking it at all?"

STEP 2

Consider overall risk of drug-induced harm in individual patients in determining the intensity of deprescribing interventions[1]

At this stage, patient-related variables and the general risk level of each medication should be evaluated. For example, is the agent appropriate given the patient's age, cognitive status, and adherence patterns? A history of substance abuse, seeing multiple prescribers, and perhaps most importantly the number of drugs they are taking are all critical elements of the prescribing process and the assessment of each medication. Even in the absence of patient variables that can further complicate medication use, some medications are inherently high risk. Some examples include opioids, benzodiazepines, psychotropics, non-steroidal anti-inflammatories (NSAIDs), anticoagulants, digoxin, cardiovascular drugs, hypoglycemic agents, drugs with anticholinergic properties, ACE inhibitors in chronic kidney disease, and the combination of an NSAID with a diuretic.

STEP 3

Assess each drug in regard to its current or future benefit potential compared to current or future harm or burden potential[1]

Once risk has been evaluated, current and potential benefits should be considered as well in order to determine which drugs are eligible for discontinuation. In assessing each medication's harm to benefit ratio, there are several key points to consider:

- Was this drug prescribed for a valid indication?
- Is the drug simply the result of a prescribing cascade (prescribed to counteract the adverse effects of another agent)?

- Is this drug for prevention, disease control, or symptom control? If preventative, is it likely to confer any patient-important benefit over the patient's remaining expected lifespan?
- Is there an unacceptable burden of the treatment?
- How effective is this drug at controlling the disease and/or symptoms?

Benefits of treatment should be outcomes that are not just statistically significant, or disease-oriented, but they should have patient-important outcomes that make a meaningful difference in the patient's life. Always look for any potential drug therapy problems when reviewing the medication list as well. The most widespread problem encountered in the deprescribing process is likely unnecessary drug therapy. However, other problems can include adverse drug reactions, interactions, dose that is too low or too high, wrong drug selection, the need for additional therapy, or nonadherence to therapy. Ultimately, the key variables to consider are the patient's life expectancy, risk to benefit ratio, the goals of the patient and those important to them, and the overall intent of treatment. A discussion of these factors and how they relate to specific medication examples is included below.

STATINS

Statins are notable candidates for deprescribing consideration, particularly at end of life. Statins do not provide any symptomatic benefit to patients, but rather are for prevention of atherosclerotic events. It is estimated that the time until benefit for statins is more than two years, and therefore would not likely be of benefit in patients with limited life expectancy.[7] However, many providers and patients are hesitant to discontinue statins, questioning the implications on safety. A recent study examined the consequences of discontinuing statin therapy in a population of 381 patients that had used a statin for at least three months for either primary or secondary cardiovascular prevent, had a life expectancy of one month to one year, experienced a recent deterioration in functional status, and had no recent active cardiovascular disease.[8] There was no significant difference in the primary endpoint (proportion of deaths within 60 days), between the 189 patients who discontinued statins and the 192 patients who continued statin therapy. There was also no significant difference in the time to the first cardiovascular-related event between groups, and the overall occurrence of these events was only 6.3% of the entire study population. In fact, total McGill quality of life score was actually improved in the patients who discontinued statin therapy as compared to those who continued therapy ($p=0.04$). In addition to the suggested safety of statin discontinuation, statin deprescribing was associated with a lower total number of non-statin medications and an average cost savings of $3.37 per patient per day. It has also been shown that stopping statins used for primary prevention after taking them for years does not increase cardiovascular events for eight years after discontinuation.[1] Ultimately, it seems reasonable to have a serious discussion regarding the discontinuation of statins in patients with limited life expectancy given that it does not appear to reduce survival and may provide some benefit to healthcare costs and quality of life.[8]

DEMENTIA

In the setting of advanced dementia, it is not entirely clear how beneficial therapy with acetylcholinesterase inhibitors such as donepezil (Aricept) or the NMDA antagonist memantine (Namenda) may be. Cholinesterase inhibitors come with a plethora of potential adverse events that may outweigh their potential benefits including insomnia, nausea, diarrhea, infections, vomiting, and anorexia. One study evaluating hospitalizations in seniors found that starting cholinesterase inhibitor therapy more than doubled a patient's risk of hospitalization for bradycardia.[9]

A study of 295 patients taking donepezil for a minimum of three months with moderate to severe Alzheimer's disease aimed to evaluate the efficacy of therapy as Alzheimer's becomes more advanced.[10] The patients were assigned to continue taking donepezil alone, taking memantine alone, taking both donepezil and memantine, or taking neither. Over the course of 52 weeks, scores were evaluated for the Standardized Mini-Mental State Examination (SMMSE) and for the Bristol Activities of Daily Living Scale (BADLS). In evaluating the changes in scores, clinically meaningful differences were defined as 1.4 points for the SMMSE and 3.5 points for the BADLS. While overall the results of the study seemed to indicate clinically significant cognitive and functional benefits with donepezil therapy, it is important to consider the severity of disease.

When the results of the study were stratified by the severity of dementia based on the SMMSE, patients with a baseline score of 5 did not achieve either measure of clinically significant improvement. It should also be noted that patients admitted to hospice care with a diagnosis of Alzheimer's dementia likely have a SMMSE score of 5 or less. Further research is needed to clearly judge the benefits of medication therapy in severe dementia, but given the high financial costs of these therapies and the often marginal benefits, it is worth a detailed discussion between providers and patients.

PSYCHOTROPICS/ANXIOLYTICS

Discontinuing psychotropic drugs and benzodiazepines has been associated with fewer patient falls and improved cognitive and psychomotor function.[1] It has also been demonstrated in randomized controlled trials that it is generally safe to discontinue antipsychotics in over 80% of dementia patients when used continuously for behavioral and psychological problems.[1] A Cochrane review of withdrawing long-term antipsychotics used to treat behavioral symptoms in older patients with dementia concluded that most patients with dementia can successfully discontinue antipsychotics without negative behavioral effects.[11] However, it should be noted that two

of the nine studies assessed found worsening of symptoms in patients with severe behavioral issues who had antipsychotic therapy withdrawn. One study also suggested that dementia patients with psychosis or agitation who responded well to antipsychotics may relapse upon discontinuation. This reinforces the need to follow the steps for deprescribing and to make decisions based on each individual patient and their unique circumstances.[11]

ANTIHYPERTENSIVES

The use of antihypertensive agents in the elderly is another potential area of evaluation. One study actually associated the discontinuation of inappropriate antihypertensives with a reduction in deaths and cardiovascular events over a five year observational period.[1] The benefits of tight blood pressure control also diminish with aging. A Cochrane review recently found that in patients over the age of 80, some data suggests no reduction in overall mortality. It has also been suggested that antihypertensives can be discontinued in many patients over 65 years of age without withdrawal symptoms or an increase in mortality.[12]

OTHER EXAMPLES

Other medications to carefully assess for discontinuation potential in older patients may include bisphosphonates for osteoporosis, warfarin in atrial fibrillation patients, oral hypoglycemic accents, and diuretics in patients with decreased intake. For example, in frail adults with atrial fibrillation over age 70, it was found that for every six patients treated for six months, one had a major bleed.[12] Benefits of preventative medications may also be long-lasting. With bisphosphonates, it has been suggested that discontinuation of alendronate after five years of treatment does not increase the risk of osteoporotic fractures over the next five years.[1]

Supplements such as multivitamins, calcium, folic acid, and ferrous sulfate are also expected to confer very little benefit in patients with shorter life expectancies. Ferrous sulfate, for example, may cause considerable gastrointestinal upset, and drug-induced dark stools, which may be confused with bleeding from the GI tract.

STEP 4

Prioritize drugs for discontinuation that have the lowest benefit-harm ratio and lowest likelihood of adverse withdrawal reactions or disease rebound syndromes[1]

Having evaluated each medication's current or potential risks and harms, the next step is to prioritize each medication by comparing these risks to the current or potential benefits that the therapy may provide. This involves examining the ease of discontinuation to avoid withdrawal and disease rebound, assessing how willing the patient is to discontinue therapy, and weighing harms against benefits. The best medications to discontinue will have the lowest benefit to harm ratio and the lowest likelihood of adverse withdrawal reactions or disease rebound syndromes. Professional judgment of risk to harm ratios should be employed when prioritizing medications for discontinuation. The algorithm used by Scott and colleagues may be consulted for additional guidance.[1]

STEP 5

Implement a discontinuation regimen and monitor patients closely for improvement in outcomes or onset of adverse effects[1]

Now that medications eligible for deprescribing have been identified, it is important to craft a thorough plan for discontinuation. Medications should be stopped one at a time to ensure that the effects of stopping each individual drug can be clearly evaluated. Thorough education on possible adverse events or withdrawal symptoms and their proper management is crucial for both patients and others involved in their care. A careful monitoring plan should be designed and closely followed as well.

CONCLUSION

While there is clearly evidence on the potential harms of polypharmacy and the benefits that may come with strategic deprescribing, there are also numerous barriers that pharmacists and other healthcare providers face in the process. Several focus groups of general practitioners in the Netherlands investigated reasons that prescribers may be hesitant to deprescribe. Regarding beliefs, some practitioners did not perceive that their patients had problems with polypharmacy or were hesitant to discuss life expectancy vs. quality of life with their patients. Some prescribers also did not feel that they have enough evidence on the risks and benefits of therapies in older patients and feel pressure to continue prescribing to follow guidelines.[13]

However, in a recent study, 100 adult patients took the Patients' Attitudes Towards Deprescribing questionnaire. On average, patients were taking 10 medications, over 60% felt they were taking a "large number" of medications, and 92% were willing to discontinue at least one of their medications. This suggests that patients may be much more receptive to deprescribing than practitioners believe, and it would be worthwhile to initiate the conversation.[14] Additionally, many of these barriers can be overcome with appropriate communication skills and empathy. Ultimately, deprescribing is a very individualized process taking into account a wide variety of patient and agent-related variables. The discussion of deprescribing needs to center around the patient and their beliefs, behaviors, and desired outcomes.

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SIDEBAR CASE

Mrs. P. is an 82 year old woman admitted to hospice with a diagnosis of Alzheimer's dementia (FAST 7D; very advanced disease). The patient lives with her daughter, who serves as the patient's primary caregiver. The daughter tells you that Mrs. P. can be somewhat combative, particularly when she takes her medication. The patient also frequently has dry heaves after the daughter wrestles her into taking the medications.

The daughter tells you the patient naps frequently during the day, doesn't want to go to sleep at night, or even stay in the bed. To assist with this complaint (since the daughter is exhausted), the daughter purchased "Simply Sleep" (diphenhydramine 25 mg) and has given the patient two tablets at bedtime for the past two weeks. The daughter doesn't think this medication has helped; as a matter of fact it's seemed to make the patient a bit more agitated.

Past medical history includes a stroke three years ago with some residual left-sided weakness and physical discomfort. The patient has never had a heart attack, and she's been taking alendronate for bone health for six years.

The patient's medication history is as follows:

Start Date	Medication
6 years ago	Alendronate (Fosamax) 5 mg po qd
5 years ago	Multivitamin po qd
4 years ago	Donepezil (Aricept) 23 mg po qd
3 years ago	Atorvastatin (Lipitor) 20 mg po qd
6 months ago	Methadone 2.5 mg po q12h
6 months ago	Senna, one or two tablets PO qd
6 months ago	Morphine oral solution, 5 mg po q2h prn additional pain (uses about three times a week)
2 weeks ago	Diphenhydramine (Simply Sleep) 50 mg po qhs

Consider the following questions:

1. Is the patient receiving any medications that are causing unacceptable adverse effects (burden > benefit)?
2. Is the patient receiving any medications that may not be causing adverse effects, but are not providing any real benefit at this point?
3. Are there medications the patient should continue at this time?

Yes, to all of the above! The daughter has told you that the patient has dry heaves after taking her medication, and this is likely related to the acetylcholinesterase inhibitor (donepezil). Also, diphenhydramine is a known cause of paradoxical reactions in older adults, and the daughter states not only has it not helped the insomnia, it seems to have made the patient more agitated.

The alendronate has accrued all the benefit it is likely to offer, possibly the same with atorvastatin. Even if we stop these medications, the benefit will persist into the future. The multivitamin is fairly inoffensive (although it can certainly cause nausea and be difficult to swallow if large) but is unlikely to be providing any patient-important benefit.

It would not be unreasonable to stop the diphenhydramine, donepezil, alendronate, atorvastatin, and multivitamin. Since the patient's pain is unlikely to disappear, it would be prudent to continue the scheduled methadone and "as needed" morphine. Because opioids predictably cause constipation, it would be wise to continue the senna.

Important steps are the make sure the daughter understands the rational for these recommended changes, and that she's supportive of this intervention. Last, the patient should be closely monitored to assure patient does not experience adverse outcomes from this deprescribing process.

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